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BIRDS OF DINAGAT AND SIARGAO, PHILIPPINES

AN EXPEDITION REPORT

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and

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INTRODUCTION

The Delaware Museum of Natural History and Mindanao State University Expedition to Dinagat and Siargao Islands (see Itinerary, Table 1) recorded 115 species of birds, 69 of which represent new records for Dinagat and 65 for Siargao, a previously uncollected island. (Throughout this paper such new records are indicated by an asterisk following the island name.) In addition, one new subspecies is described. The senior author is responsible for the taxonomic accounts, and the junior author is responsible for the ecological accounts. The latter led the field party and has also contributed many heretofore unpublished field notes about Philippine birds.

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DINAGAT AND SIARGAO ISLANDS

Geographic, Physiographic, and Geologic Features

Dinagat Island, the largest of the Dinagat Group (area about 671 sq. km. or 347 sq. miles) is located at 10° north latitude and 125°45' east longitude. It lies southeast of the southern end of Leyte Island and is north of Surigao del Norte Province on the northeastern projection of Mindanao Island. One of the smaller islands in the eastern Philippines, Dinagat lies on the Pacific Ocean side; together with Luzon, Polillo, Catanduanes, Samar, Mindanao, and Siargao, it forms a small part of the Eastern Rim of the Archipelago that directly borders the Philippine Deep.

Siargao Island, much smaller than Dinagat (area about 347 sq. km. or 134 sq. miles) is located at 9°55' north latitude and 126°10' east longitude. It is the largest of the Siargao Group and lies to the southeast of Dinagat Island and not far from it. It is immediately northeast of Surigao del Norte Province, in the northeastern projection of Mindanao Island. Together with Dinagat Island, it forms one of the smaller islands on the Pacific Ocean side of the Philippine Archipelago.

On Siargao, and especially on Dinagat, there are wide areas in the interior among the mountains where the soil is red, heavy, and metallic. Smith (1924) has identified this type of soil as laterite. He writes that "in the Philippines there is much laterite in various localities at both high and low altitudes. In Surigao Province, northeastern Mindanao, there is the greatest extent of this deposit yet found in the Philippines." Considering the fact that Dinagat and Siargao are supported by the same platform and actually represent a small portion of the submerged platform of the Eastern Rim, as it is found south of Samar Island, the same type of soil is to be expected on both small islands. In fact, at present there are iron and nickel mines in Surigao del Norte Province and in several localities on Dinagat and Nonoc Islands. Meanwhile, explorations for iron and nickel continue on Dinagat, Siargao, and other islands of the Dinagat and Siargao Groups.



Figure 1: Dinagat Island.

**Table 1: Itinerary of the
Dinagat-Siargao Biological Expedition**

March 7, 1972	Departure from Mindanao State University, Marawi City, for Loreto, Surigao del Norte, on Dinagat Island.
March 8	Arrival in Cebu City. Purchase of supplies and materials needed in the operation of the expedition party on Dinagat and Siargao Islands; departure for Surigao, Surigao del Norte, by ship at 10:00 PM.
March 9	Arrival in Surigao, Surigao del Norte.
March 10	Departure for Loreto Municipality on Dinagat Island, Surigao del Norte, by motor launch; arrival at Loreto at 6:00 PM.
March 11	Established main headquarters and base camp in Barrio Kambinlio, Loreto, about 4 km. northeast of the town, at the base of Mt. Kambinlio, second highest mountain on the island. Camp located about 1 km. from sea coast and on the northern bank of a good-sized stream.
March 12 to April 24	Collections of terrestrial vertebrates and studies on the natural history of the area conducted in Kambinlio and the surrounding localities, including the hills and mountains comprising Mt. Kambinlio and Mt. Redondo.
March 27	Collecting team of eight members led by Quintin M. Bautista, Jr., established collecting subcamp in Sitio Omasdang ("Masdang" on most maps of the area), situated close to the northeastern end of Dinagat Island on the Pacific Ocean side.
March 27	Second collecting team of eight members led by Policarpio Dingal established another subcamp on the lower elevations of Mt. Kambinlio, on the western side, at Sitio Magkono, about 600 meters above sea level.
March 28 to 30	Sitio Magkono team made collections of terrestrial vertebrates, especially birds and mammals, on higher elevations of Mt. Kambinlio, but strong rains and winds forced them down to base camp at Barrio Kambinlio late in the afternoon of March 30.
March 28 to April 4	Collections of natural history specimens, especially terrestrial vertebrates, and studies on the natural history of the area conducted in Omasdang subcamp and the localities toward the interior.
March 31	Collecting team of eight members led by Roberto Lim established subcamp in Sitio Paragua, Barrio Esperanza, Loreto, on the slopes of the main peak of Mt. Kambinlio, about 250 meters above sea level.

- April 1 to 8 Collections and studies conducted in the forested localities in and around the Sitio Paragua subcamp on the slopes of Mt. Kambinlio and toward the main peak.
- April 5 to 6 Collections and studies continued in the localities around Barrio Kambinlio base camp; surveys made in the more interior localities toward Mt. Kambinlio and Mt. Redondo peaks for possible establishment of subcamp sites from which future collecting could be based.
- April 7 to 17 Collections and studies conducted from Sitio Balitbiton subcamp; led by Quintin M. Bautista, Jr.
- April 9 Sitio Paragua subcamp collecting team returned to Kambinlio base camp.
- April 10 Team of eight members led by Roberto Lim established collecting subcamp in Barrio Plaridel, Albor, on the western side of Dinagat Island. Camp was established in a logged area in rolling country and low hills where there were still many patches of remnant dipterocarp forests in the surrounding localities.
- April 11 to 24 Collections and studies conducted in Plaridel and surrounding localities, especially in the interior where forests were still dense.
- April 25 Departure of main body of expedition party from Kambinlio main camp for Dapa on Siargao Island, Surigao del Norte. Plaridel collecting team joined party when launch that it took for Surigao passed Plaridel, Albor, on its way to Surigao. Party arrived in Surigao in early afternoon; purchased needed materials and supplies for operations on Siargao Island.
- April 26 Departure for Dapa by launch, arriving there in early afternoon. Party proceeded immediately to Barrio Osmeña in the interior of the southern end of Siargao Island and established base camp in barrio meeting hall, a large building without walls but with good floor and roof.
- April 27 to May 5 Collections and studies conducted on Siargao Island, including localities in and around Barrio Osmeña in the southern part of the island; Maasin, Pilar, in the southeastern part; Antipolo, Numancia, in the northwestern part; and San Isidro in the northeastern part.
- May 6 Departure of expedition party from Barrio Osmeña base camp, Dapa, for Mindanao State University via Surigao, Cebu City, and Iligan City; arrival in Surigao late in afternoon.

May 7	Departure for Cebu City.
May 8	Arrival in Cebu City.
May 9	Departure for Iligan City.
May 10	Arrival in Iligan City; proceeded immediately to Mindanao State University.

Dinagat and Siargao are both predominantly hilly and mountainous. In many places the hills and mountains reach the sea, thus producing very much eroded steep cliffs against which the waves beat constantly. This phenomenon is well demonstrated on the Pacific Ocean side of Dinagat Island, where the entire east coast has high precipitous cliffs and only a few narrow strips of level, white sandy beaches, found only inside the very few well protected and almost totally enclosed small coves. The large waves of the Pacific Ocean cannot reach these well concealed areas.

Both Dinagat and Siargao, as well as the other small islands in these groups, have very rough and rocky terrain, with relatively small areas of flatlands that can be used for productive farming. On Dinagat Island most of the cleared areas, even on the less rough terrain on the western half, are planted to sweet potatoes, cassava, corn, and upland rice, with a very minor area devoted to wet-rice culture. Along the streams, which are mostly short and tidal and where the soil gets sufficient moisture, the inhabitants have planted Biga or Badiang (*Alocasia macrorrhiza* [Linn.]) in good quantities for use as food once the



Figure 2: Islet off the west coast of Dinagat Island.



Figure 3: Rock cliff on the west side of Dinagat Island.

reserves of rice, corn, camote, and cassava are exhausted. The plants are left to grow for as long as five years with little care. Usually they are not utilized for food so long as there are still regular food crops, but strong Pacific typhoons and northeast monsoons frequently subject these islands to long periods of bad weather and prevent the arrival of boats carrying food. For this reason the inhabitants of Dinagat and Siargao culture plants of the Araceae family in the places that are not utilized for planting other crops.

The human settlements on Dinagat and Siargao have been established in regions where there are flatlands and, frequently, where there are streams that drain the areas. It is only in these localities that wet ricefields, coconut groves, cornfields, and other farm areas for various crops can be developed most favorably. Thus, the present towns and large barrios on both Dinagat and Siargao are always situated in well drained flatlands, which coincide with the locations of valleys and small coastal plains, with low and gradually sloping hills in the hinterlands.

On the eastern half of Dinagat there is an extensive and continuous range of mountains (elevations 350-900 meters or slightly more) that is interrupted in only two places. First, a good-sized river drains more than two thirds of the entire east-west breadth of the island. Cutting across the middle region, this river starts in the mountainous regions on the western side and flows toward the eastern side. Second, there is an inland extension of the sea, a long and deep inlet that starts on the eastern side of the island and penetrates deep into the central interior at

the level of the northern one third of this island. Along much of these two inland bodies of water, there are extensive swamps that are covered with the mangrove forest type of vegetation and nipa palms.

The western half of Dinagat Island is likewise hilly and rough, but the hills are not very high and many of them have gradual slopes that are still suitable for cultivation. Thus, the cultivated areas on the western half of the island are definitely more extensive and contrast distinctly with the rough and heavily forested mountains on the eastern half.

Siargao, too, has very rough terrain throughout the entire island, but exceptionally so in its interior regions. Unlike Dinagat, however, the highlands of Siargao do not reach high elevations, being only about 100–275 meters above sea level. Many of the hills have easy and gradual slopes that permit extensive cultivation. As a result, large areas in the interior of Siargao are cultivated and farmed. The greater portion of the hinterlands of Siargao is really rolling country, already well cultivated and planted to various crops. Thus, there is a larger area under cultivation on Siargao Island than on Dinagat.

Ecologic and Biologic Features

Flora

Dinagat has large areas of untouched original forest vegetation that still thrive luxuriantly, especially on the higher elevations of hills and mountains in the eastern half. Large patches of various types of original forest can be found, especially on the sides, ridges, and tops of hills. In contrast, the areas of original vegetation on Siargao are no longer as extensive as those on Dinagat. Original vegetation areas are restricted to patches found on the sides, ridges, and tops of steep hills mainly in the interior. The hills close to the coasts average lower elevations and



Figure 4: River mouth and camp at the base of Mt. Kambinlio, Dinagat Island.

have gradually sloping sides, with plenty of rolling country among them; hence, they have been cleared and cultivated by the inhabitants. Except for the comparatively few, steep, inaccessible places on most of the hills close to the coast, the greater part of the countryside is well farmed.

On both Dinagat and Siargao there are large areas of grasslands occupying the hillsides and the slopes of mountains at lower elevations. In fact, sometimes entire hills and the greater part of a mountain are occupied by tall grass, mostly Kogon (*Imperata cylindrica* [Linn.] and *I. exaltata* Brongn.). After months or even years, these grasslands are burned, cultivated again, and planted to food crops.

At present, the following habitat types are found on the islands:

Original forest vegetation

Mangrove forest

Beach forest

Dipterocarp forest

Scrub forest

Mossy forest

Secondary forest vegetation

or second-growth forest

Parang vegetation

Grasslands and open-country
vegetation

Cultivated areas

Original Forest Vegetation Type. Dinagat Island, at present, still possesses extensive areas of original forest vegetation that belong to several types. In some places, these original vegetation types are represented by only remnant patches, especially in the areas that people have cleared for use. These original vegetation areas or remnant patches are found from the coasts, at sea level, and into the interior in the highlands, as high as 950 or so meters above sea level. The mountainous regions, especially in the eastern half of Dinagat Island, are still covered with wide areas of scrub forests, which occupy the sides, ridges, and peaks of mountains. There are still small patches of remnant original dipterocarp forests on the lower elevations of hills and mountains in the central parts, as well as in the small valleys among the mountains. Along the coasts, especially on the western side of Dinagat, there are narrow strips of mangrove and beach forests still of the original types, in addition to the mixed remnant original mangrove and second growth of this forest type. Many swamps formerly occupied by mangrove forests are now cleared of all mangrove species and have been planted to nipa palms (*Nyssa fruticans* Würmb.).



Figure 5: Ricefields at the base of Mt. Kambinlio, Dinagat Island.

Siargao Island also has good areas of some original forest vegetation types. The original dipterocarp forest vegetation type, however, is practically all gone on this island, except for some small patches of mixed remnant dipterocarp and second growth, with the least number of species belonging to the dipterocarps.

Mangrove Forest Type. Numerous patches of mangrove forest are still found in narrow strips along the coasts of Dinagat Island, especially on the western side. The favorite sites of the small patches of remnant original mangrove forest vegetation and of the mixed growths of remnant original mangrove and second-growth mangrove vegetation type are the shores along the coves and other well protected areas along the coasts. On the eastern side where steep cliffs reach the sea and no beaches are formed at all, the mangrove forest vegetation type is scarcely found, except in the concealed and well protected coves. On the average, the small patches of mangrove forests found in many places on Dinagat Island are no longer of the same type as the patches of original mangrove forest vegetation type found on the other islands of the Philippines, or even on the islands near Siargao, where they have been left untouched. In many places the swamps are occupied with dense growths of nipa palms (*Nypa fruticans* Würmb.) with which the inhabitants have replaced the original mangrove type of vegetation. The nipa palms supply the much-needed roofing and walling materials the people use when they build their houses. They also utilize the nipa palms as sources of a native drink and as vinegar.

Siargao Island has comparatively wider areas of original mangrove forests. There are also small islands lying close to Siargao that are covered with very dense growths of this type.

Characteristic of an original mangrove forest patch anywhere in the Philippines, a similar patch on Dinagat and Siargao contains the following plant forms:

<i>Rhizophora</i> spp.	RHIZOPHORACEAE
<i>Ceriops</i> spp.	"
<i>Bruguiera</i> spp.	"
<i>Sonneratia</i> spp.	SONNERATIACEAE
<i>Avicennia officinalis</i> Linn.	VERBENACEAE

In the drier and sandier areas of the mangrove swamps the following plant species may also be found growing side by side with the typical mangrove forest species:

<i>Lumnitzera littorea</i> (Jack)	COMBRETACEAE
<i>Heritiera littoralis</i> Dryand.	STERCULIACEAE
<i>Xylocarpus</i> spp.	MELIACEAE
<i>Acanthus</i> spp.	ACANTHACEAE
<i>Caesalpinia</i> spp.	LEGUMINOSAE
<i>Hydnophytum formicarum</i> Jack	RUBIACEAE
<i>Myrmecodia echinata</i> Gaudich.	"
<i>Acrostichum aureum</i> Linn.	POLYPODIACEAE

As a whole, the remnant mangrove forests on Dinagat Island are narrow strips along the coast, frequently extending into the sea for several meters. During high tides the sea covers the ground, and these forest patches appear like forests in the sea. This condition is very well observed along the western side of the island.

On Siargao there are still many remnant mangrove forest patches, some of them quite extensive, which are typical of this original vegetation type as found anywhere else in the Philippines.

Beach Forest Type. On both Dinagat and Siargao the beach forest vegetation type is found usually in small patches and in narrow strips of varying extents along the seashores, especially on the western sides of these islands. On both islands the larger parts of the areas that used to be occupied by original beach forests have already been cleared and planted to coconut (*Cocos nucifera* Linn.). In some places along the coasts, far from human settlements, there are still some remnant areas of original beach forests. On Dinagat Island, especially, there are unoccupied localities with some areas of lowlands that start at the base of the hills in the interior, about 0.5 km. inland, and extend to the sea, forming sandy beaches. Remnant patches of beach forests grow in them. Usually there are also areas of mangrove forests, either original patches or second-growth, that occupy certain parts of the beaches closest to the sea and extend into the water for several meters. During low tides



Figure 6: River and forest at the base of Mt. Kambinlio, Dinagat Island.

these areas go dry temporarily, thus leaving the entire mangrove forest patch out of water. The areas are not very wide and do not extend more than 20–25 meters inland.

In the localities where there are no beaches at all, where the hills meet the sea directly and form steep banks with rocky overhangs, there are still remnants of what used to be beach forest vegetation. Patches of this vegetation type grow on top of the rocky cliffs as high as 10 meters above sea level. They also occupy the steep banks and hillsides along the coasts of Dinagat Island.

The plant species growing on these modified locations are found in typical beach forest vegetation types and include the following:

<i>Barringtonia</i> spp.	LECYTHIDACEAE
<i>Terminalia catappa</i> Linn.	COMBRETACEAE
<i>Vitex trifolia</i> Linn.	VERBENACEAE
<i>Casuarina equisetifolia</i> Forst.	CASUARINACEAE
<i>Pandanus</i> spp.	PANDANACEAE
<i>Cycas Rumphii</i> Miq.	CYCADACEAE
<i>Caesalpinia</i> spp.	LEGUMINOSAE
<i>Ipomoea pes-caprae</i> (Linn.)	CONVOLVULACEAE
<i>Acanthus</i> spp.	ACANTHACEAE

Because of erosion most of the islets found along the western side of Dinagat Island have no more beaches. On top of these islets vegetations closest to the beach forest type also develop. Many of them look very attractive, with stands of *Casuarina equisetifolia* growing side by

side with some palms that look like species of *Oncosperma* and *Livistona*. Among them are some *Cycas Rumphii*. On Siargao Island the coasts also contain patches of beach forests, but not in large areas.

Dipterocarp Forest Type. On Dinagat there are still good-sized areas of dipterocarp forests found as large patches on the slopes of mountains on the eastern half of this island. Some large areas are found on the lower slopes of Mt. Redondo and Mt. Kambinlio, in the northeastern third of the island. On the western half there are also good-sized patches of remnant original dipterocarp forests growing on the hill-sides and in the small valleys that have been built up by the rivers coming from the interior. In the lower hills at the bases of Mt. Kambinlio and Mt. Redondo, there used to be many areas of dipterocarp forests, but these have since been cleared by the "kaingineros," or slash-and-burn farmers.

In many localities on the western coast of Dinagat there are patches of logged dipterocarp forests, and these extend down to almost the very sides of the sea. Logging is still actively pursued on Dinagat Island in spite of the questions raised by some of the mayors concerning the legality of the activity, considering the fact that the areas being logged have been granted as concessions for mineral explorations and possible exploitation as mines but not as logging and lumber concessions. The argument still goes on at present; meanwhile, the loggers continue to cut down the dipterocarp forest areas.

It is interesting to note that the people on Dinagat Island consider the lumber from their dipterocarp, scrub, and other forests much harder than that taken from the same species on other islands, including that from mainland Mindanao. They claim this extraordinary hardness is caused by the excessive deposition of metals, notably iron, absorbed by the trees from the soil. The wood, which is known locally as "Magkono," is really very hard and easily breaks the cutting edges of bolos and axes.

The plants that are found in the remnant patches of original dipterocarp forests include the trees and other plants typical of original forests on Mindanao and other islands of the Philippines. The Forest Research Division of the Bureau of Forest Development, Republic of the Philippines, and the Philippine National Herbarium list the following species found on Dinagat and Siargao, which form the important components of the first and second stories in the remnant patches of original dipterocarp forests on these islands:

<i>Dipterocarpus grandiflorus</i>	DIPTEROCARPACEAE
Blanco	
<i>D. vernicifluus</i> Blanco	"
<i>Shorea almon</i> Foxw.	"
<i>S. guiso</i> (Blanco)	"



Figure 7: Dr. D. S. Rabor in front of the cut base of a dipterocarp tree, Mt. Kambinlio, Dinagat.

<i>S. squamata</i> (Turcz.)	DIPTEROCARPACEAE
<i>S. negrosensis</i> Foxw.	"
<i>S. teysmanniana</i> Dyer	"
<i>S. astylosa</i> Foxw.	"
<i>S. polysperma</i> (Blanco)	"
<i>Hopea acuminata</i> Merrill	"
<i>H. plagata</i> (Blanco)	"
<i>Anisoptera thurifera</i> (Blanco)	"
<i>Pentacme contorta</i> (Vid.)	"
<i>Eugenia</i> spp.	MYRTACEAE
<i>Xanthostemon verdugonianus</i>	"
Naves	
<i>Neonauclea calycina</i> (Bartl.)	RUBIACEAE
<i>Artocarpus communis</i> Forst.	MORACEAE
<i>Ficus</i> spp.	"
<i>Mimusops parvifolia</i> R. Br.	SAPOTACEAE
<i>M. callophyloides</i> Merrill	"
<i>Diplodiscus paniculatus</i>	TILIACEAE
Turcz.	
<i>Koordersiodendron pinnatum</i>	ANACARDIACEAE
(Blanco)	
<i>Wrightia laniti</i> (Blanco)	APOCYNACEAE
<i>Alphonsea arborea</i> (Blanco)	ANNONACEAE
<i>Intsia bijuga</i> (Colebr.)	LEGUMINOSAE
<i>Albizia acle</i> (Blanco)	"
<i>Azelia rhomboidea</i> Vid.	"
<i>Diospyros pyrrocarpa</i> Miq.	EBENACEAE
<i>D. mindanaensis</i> Merrill	"
<i>D. philippinensis</i> Gurke	"
<i>D. ferrea</i> Engler	"
<i>Vitex parviflora</i> Juss.	VERBENACEAE
<i>V. turczaninowii</i> Merrill	"

The plant species forming the third story in a typical dipterocarp forest patch on Dinagat Island are mostly the typical forms found in the same forest type on other islands, especially on Mindanao. They include:

<i>Laportea</i> spp.	URTICACEAE
<i>Macaranga</i> spp.	EUPHORBIACEAE
<i>Mallotus</i> spp.	"
<i>Ficus</i> spp.	MORACEAE

On the trunks and branches of the taller tree species, the following plant species comprise the dominant epiphytes and climbers:

<i>Calamus</i> spp.	PALMAE
<i>Pandanus</i> spp.	PANDANACEAE
<i>Freycinetia</i> spp.	"
<i>Phalaenopsis</i> spp. and other Orchidaceae	ORCHIDACEAE
<i>Schizostachyum</i> spp. and other climbing bamboo species	GRAMINEAE

The typical three-story vegetation types found in the dipterocarp forests on Dinagat Island are also found on other islands of the Philippines. In the logged-over areas, however, most of the tall first-story tree species are frequently very much reduced in numbers, and the remaining forest type becomes more dense and tangled, with more growths on the forest floor. This is in contrast to the clean forest floor of the untouched dipterocarp forest vegetation type on other islands. The Dinagat undergrowth consists mainly of rattan and ferns.

On Siargao Island there are a few small patches of real original dipterocarp forests left. The inhabitants have already cleared up most of this forest vegetation type and utilized the lumber in constructing their buildings and for other articles made of wood. Inside some small valleys among the hills, especially along the areas drained by a stream, and up the basal portions of the adjacent hills, remnants of what used to be dipterocarp forests are found. On the higher elevations of the hills other types of vegetation are usually found.

Scrub Forest Type. On Dinagat Island many of the hills and low mountains in the interior are rocky, and the soil is usually dry. In these sites a type of forest vegetation is found that is characterized by the dense growth of low trees, averaging 6-7 meters in height and about 30-32 cm. in diameter in the middle of the trunk. There is only one height of trees growing in the area. A typical patch of this forest vegetation type resembles very closely the scrub forest vegetation type found on the larger islands of the Sulu Archipelago. Upon closer observation the resemblance is further shown by the presence of many plant forms that are either identical to or members of the same families.

In the small areas of low flatlands in the lowlands and among the bases of the hills and mountains, where streams come from the mountains in the interior and drain the sites, remnant patches of dipterocarp forests are found. In the same general locations but higher up, scrub forests grow and cover the entire sides, tops, and ridges of the hills and mountains. Immediately above the highest level of the real dipterocarp forest vegetation patches and immediately below the lowest level of the scrub forests, the vegetation type becomes very similar to the midmountain forest vegetation type, which is characteristic of mainland Mindanao highland areas. Unlike the Mindanao mainland or Leyte, however, there is no distinct zone on Dinagat Island where a real midmountain forest is found. At most, this region between the real dipterocarp forest vegetation type and that occupied by the scrub forest vegetation type is a transition area and shares the characteristics of both vegetation types.

The typical and ideal site for the scrub forest vegetation type is one that is rocky, has dry soil, and is exposed to strong winds from all

directions. The hilly and mountainous terrain of Dinagat Island provides many ideal sites for the scrub forest vegetation type to thrive in. In fact, starting from very close to the seacoast and proceeding into the interior and on up the hills and mountains, including the slopes, ridges, and tops, large areas on Dinagat Island are densely covered with scrub forests.

On the slopes of Mt. Redondo and Mt. Kambinlio, but not on the tops and ridges or even on the higher elevations of these two high peaks, large areas of scrub forests grow. At higher elevations another type of original forest vegetation replaces the scrub forests.

The following plant species are found in scrub forests on Dinagat Island:

<i>Premna odorata</i> Blanco	VERBENACEAE
<i>Vitex</i> spp.	"
<i>Ficus ulmifolia</i> Lam.	MORACEAE
<i>Ficus</i> spp.	"
<i>Bauhinia malabarica</i> Roxb.	LEGUMINOSAE

At the outskirts of scrub forests, especially where there are adjoining cleared areas or where second-growth vegetation patches have begun to develop, the following plant species are found:

<i>Macaranga tanarius</i> (Linn.)	EUPHORBIACEAE
<i>Antidesma ghaesembilla</i> Gaertn.	"
<i>Lantana camara</i> Linn.	VERBENACEAE
<i>Tabernaemontana pandacaqui</i> Poir.	APOCYNACEAE
<i>Leucaena glauca</i> (Linn.)	LEGUMINOSAE

In the upper elevations on the slopes of the higher peaks and on the tops and ridges, the vegetation changes in nature and differs from the scrub forest vegetation type. On the average, the trees become shorter (4-5 meters or less) and the diameter of the trunks at the middle becomes smaller (20 cm. or less). The trunks and branches are covered with dense layers of ferns and mosses, so that the trunks and branches appear double their actual size. Moreover, the trees have a tendency toward irregular forms compared to the average trees found in the typical scrub forest. As is characteristic of the higher elevations of Philippine mountains, the scrub forest vegetation type here blends imperceptibly into the mossy forest vegetation type.

Scrub forests grow extensively on the steep and very rocky parts of the hills on Siargao Island. On the tops and ridges of most of the higher hills, the scrub forests are found in large areas and remain almost untouched. The tops and ridges of the lower hills, especially the easily accessible elevations and those with gentle slopes, are mostly covered with grasslands or second growth. People use them for planting

their food crops, especially camote or sweet potato, cassava, corn, and once in a while even upland rice.

Mossy Forest Type. On Dinagat Island the scrub forests that grow in the higher elevations change imperceptibly to the mossy forest vegetation type. The distinctive characters of the vegetation in these elevations, especially on the exposed ridges and peaks of mountains, are:

1. the presence of dense growths of mosses, liverworts, and ferns, especially the first group of plants, on the trunks and branches of the trees, making these parts appear much larger than they actually are;

2. the marked decrease in the heights of the trees from the average of about 6-7 meters in the scrub forests at lower elevations to heights of about 3-4 meters in the mossy forest areas; and

3. the very irregular shapes of the trees, unlike those of identical species found in the scrub forests at lower elevations.

The mossy forest areas on Dinagat are not as extensive as those on the higher mountains of the larger nearby islands, such as Mindanao and Leyte; and the dense growths of mosses, liverworts, and ferns on the forest floor are found only in very restricted areas on the ridges and summits of the mountains at about 800 meters and above, especially on Mt. Redondo (929 meters above sea level) and Mt. Kambinlio (903 meters above sea level). These areas are frequently found in small gullies and other concavities where they are not affected by strong winds.

The real mossy forests are found only on the high ridges and summits of peaks in the very mountainous regions of the eastern half of Dinagat Island. There are no real and typical mossy forests on Siargao Island, even on the highest ridges and peaks of the hills: the hills on Siargao are not very high, reaching elevations of about 200-274 meters above sea level at most.

Secondary Forest or Second-Growth Forest Vegetation Type. Large areas on both Dinagat and Siargao are already covered with secondary forests. The rough and hilly western half of Dinagat contains extensive second-growth forests beginning from the coasts (and whatever lowlands there are between the coasts and the hills) and extending into the interior, including rolling country, hills, and the slopes of lower mountain peaks, especially where the slopes are gradual and fit for cultivation. The inhabitants of Dinagat have already cleared large tracts of the primary vegetation cover and have planted their crops in the cleared areas. After several years these cleared areas are abandoned and left to develop whatever plants flourish in them. Secondary forests eventually cover all these areas. Meanwhile, the slash-and-burn farmers, or "kaingineros" as they are called, have moved on and selected another area for clearing. Many of these areas are fertile and are made into regular farms eventually.

On Siargao Island there are also large secondary forests areas resulting from the activities of the inhabitants. As on Dinagat, these areas are found from along the coasts and deep into the interior, covering rolling country, flatlands, and hills. The cultivated areas, especially those on the sides and tops of hills, are frequently allowed to grow back to second-growth forests before they are cleared again after several years of this forested condition.

A typical patch of secondary forest on either Dinagat or Siargao resembles other patches of secondary forest in the Philippines. The plant growths in such a patch are typically a mixture of trees of various heights, shrubs, bushes, and even herbs, all growing together in different degrees of density in the various parts of a particular site. There is usually the sparse growth of tall trees, quite far from each other. Lower trees are more numerous and are found among the taller ones. Shrubs and bushes grow among the trees and form dense growths. In some places there is a dense covering of herbs on the forest floor. The lower growths, including the shrubs and bushes, may grow very close to one another in some areas, making progress on foot very difficult. In other sites, however, the plants are not close at all, and one can walk among them with no difficulty.

The following trees, shrubs, bushes, and herbs are found frequently in any second-growth forest patch on Dinagat and Siargao:

<i>Premna odorata</i> Blanco	VERBENACEAE
<i>Vitex</i> spp.	"
<i>Macaranga tanarius</i> (Linn.)	EUPHORBIACEAE
<i>Antidesma ghaesembilla</i> Gaertn.	"
<i>Diospyros discolor</i> Willd.	EBENACEAE
<i>Ficus</i> spp.	MORACEAE
<i>Artocarpus</i> spp.	"
<i>Sterculia foetida</i> Linn.	STERCULIACEAE
<i>Sesbania grandiflora</i> (Linn.)	LEGUMINOSAE
<i>Leucaena glauca</i> (Linn.)	"
<i>Bauhinia malabarica</i> Roxb.	"
<i>Erythrina indica</i> Lam.	"
<i>Tabernaemontana pandacaqui</i> Poir.	APOCYNACEAE
<i>Datura metel</i> Linn.	SOLANACEAE
<i>Justicia gendarussa</i> Burm.	ACANTHACEAE
<i>Blumea balsamifera</i> (Linn.)	COMPOSITAE
<i>Andropogon</i> spp.	GRAMINEAE
<i>Coix lachryma-jobi</i> Linn.	"
<i>Amorphophallus campanulatus</i> (Roxb.)	ARACEAE
<i>Musa</i> spp.	MUSACEAE
<i>Areca catechu</i> Linn.	PALMAE
<i>Caryota Rumphiana</i> Mart. var. <i>philippinensis</i> Becc.	"

<i>Pandanus</i> spp.	PANDANACEAE
<i>Eugenia</i> spp.	MYRTACEAE
<i>Psidium guajava</i> Linn.	"
<i>Trema amboinensis</i> (Willd.)	ULMACEAE
<i>Melia candollei</i> Juss.	MELIACEAE

In many places the secondary forest patches become surrounded by grasslands with sparse growth of nongrass vegetation; eventually the open countryside becomes an area of mixed grass and patches of tree-shrub-bush growths of varying sizes, giving rise to the parang vegetation type.

Parang Vegetation Type. The parang vegetation type is a mixture of grassland and second-growth forest. This vegetation type may be considered either as one where the grasslands are being invaded by patches of second-growth trees, or as one in which patches of second-growth forests are gradually being encroached upon and perhaps being taken over by grasslands. If fires are used repeatedly in clearing a particular area of secondary forest of its tree-shrub-bush growths, then the grasses belonging to the tall species group, such as *Kogon*, *Imperata exaltata* Brongn. and *Imperata cylindrica* (Linn.), and *Saccharum spontaneum* Linn. var. *indicum* Hack., develop and eventually become dominant. If the grasses are not burned in a particular area, then this area is quickly invaded by secondary forest species—trees first, followed by shrubs, and then by bushes. Eventually these tree-shrub-bush growths form larger and larger patches in the grasslands, and the site becomes a typical parang vegetation area. When the people leave a parang area free from burning for a long time, the secondary forest patch becomes larger and larger until a patch of secondary forest is formed. The grasslands around the second-growth forest patch will gradually be grown over, and eventually only the second-growth forest will be left. The area thus becomes a secondary forest patch.

On Dinagat and Siargao Islands, there are good-sized areas occupied by parang vegetation. In the same areas there are also good-sized grasslands and open country, as well as patches of varying sizes of secondary forests. In the interior regions of Dinagat and Siargao, the hillsides and the gentle slopes of low mountains are covered with mixed vegetation types of grassland, parang, and second-growth forest. Any one of these three vegetation types can develop into any of the other types if given time and the requisite conditions.

In a typical area covered with parang vegetation on Dinagat and Siargao, the following plant species are commonly observed:

<i>Imperata</i> spp.	GRAMINEAE
<i>Saccharum spontaneum</i> Linn.	"
var. <i>indicum</i> Hack.	"
<i>Andropogon</i> spp.	"

<i>Acacia farnesiana</i> (Linn.)	LEGUMINOSAE
<i>Bauhinia malabarica</i> Roxb.	"
<i>Leucaena glauca</i> (Linn.)	"
<i>Erythrina indica</i> Lam.	"
<i>Gliricidia sepium</i> (Jacq.)	"
<i>Mimosa pudica</i> Linn.	"
<i>Mucuna pruriens</i> (Linn.)	"
<i>Antidesma ghaesembilla</i> Gaertn.	EUPHORBIACEAE
<i>Macaranga</i> spp.	"
<i>Mallotus moluccanus</i> (Linn.)	"
<i>Trema orientalis</i> (Linn.)	ULMACEAE
<i>Eugenia</i> spp.	MYRTACEAE
<i>Psidium guajava</i> Linn.	"
<i>Artocarpus</i> spp.	MORACEAE
<i>Ficus</i> spp.	"
<i>Lantana camara</i> Linn.	VERBENACEAE
<i>Tabernaemontana</i> spp.	APOCYNACEAE
<i>Semecarpus cuneiformis</i> Blanco	ANACARDIACEAE
<i>Cordia dichotoma</i> Forst.	BORRAGINACEAE
<i>Canarium odoratum</i> (Lam.)	ANNONACEAE
<i>Pandanus</i> spp.	PANDANACEAE

Grasslands and Open-Country Vegetation Type. Large portions of the rolling country, hillsides, and mountainsides in the interior regions of Dinagat and Siargao Islands are covered with grasslands and open-country vegetation type. A typical grassland area is a very monotonous part of the countryside to traverse, because of the sameness of the vegetation type.

The extensive tracts of grasslands and open-country vegetation on both islands are principally large areas of grasses composed mainly of Kogon grass, *Imperata exaltata* and *I. cylindrica*, and Talahib grass, *Saccharum spontaneum*. Both grass genera grow typically in dense, pure stands and cover wide extents unless prevented from doing so. There is a typical pattern of distribution of these grasses in any area of grass-



Figure 8: Coast of Siargao Island.

lands. At the base or in the lower elevations of a grass-covered hill or mountain slope closest to the base, pure stands of *S. spontaneum* predominate. These stands vary in their denseness, depending largely on the moisture content in the soil; the greater the moisture content in the specific site, the larger the area of the stand that grows on it and the more dense the grasses grow. The mature Talahib grass grows to about 2-3 meters in height.

At the bases of hills and mountains, streams are most likely to be found, especially if the area (including the hinterlands) is not yet cleared and its original forest vegetation still continues to flourish. In general, where the moisture content of the soil is higher than in the other parts of a particular area, especially at the base of a hill or mountain, *S. spontaneum* grows favorably and likely forms dense, pure stands. Higher on the hillsides and on the mountain slopes, there is likely to be less moisture content because the rains do not stay in these elevations long enough for the soil to absorb the water and store it. *Imperata* grows in dense stands in these areas, which are higher in elevation on the hillsides and mountain slopes. This grass also grows in pure stands and can cover very wide areas on hillsides, hilltops, mountainsides, and mountaintops, as well as the ridges. If there is a small stream or gully or a spring situated anywhere on the side of a hill or mountain, then another type of vegetation will develop in this particular site, and grasslands will develop in the drier areas. *S. spontaneum* grows abundantly in pure stands along these streams, springs, and gullies, where sufficient moisture is absorbed by the nearby soil.

In a typical grassland and open-country vegetation type on Dinagat and Siargao, as on the other islands in the Philippines, the principal grass species covering large areas include the following:

<i>Imperata exaltata</i> Brongn.	GRAMINEAE
<i>I. cylindrica</i> (Linn.) Beauv.	"
<i>Saccharum spontaneum</i> Linn.	"
var. <i>indicum</i> Hack.	

Other species of tall grass are also found, but they occur only in small patches mixed among the large tracts of *Imperata* spp. and *S. spontaneum*. The following species of grass are frequently seen in grassland areas:

<i>Andropogon</i> spp.	GRAMINEAE
<i>Rottboellia</i> spp.	"
<i>Apluda</i> sp.	"
<i>Ischaemum</i> spp.	"
<i>Themeda triandra</i> Forsk.	"
<i>Paspalum</i> spp.	"
<i>Panicum</i> spp.	"
<i>Eragrostis</i> spp.	"



Figure 9: Typical coconut grove on Siargao Island.

A number of trees, shrubs, and bushes also grow in grasslands and open-country vegetation areas, mixed with Kogon, Talahib, and other minor grass species. The trees and shrubs, especially those of the same species, frequently grow singly and occur far from one another. They do not form real patches of nongrass growths in the typical grasslands. The bushes, however, may form small clumps or patches, especially when growing in flat grassland areas or in gently rolling country. The following species of trees, shrubs, and bushes are frequently found in grasslands, mixed with the broad, dense stands of grass:

<i>Antidesma ghaesembilla</i> Gaertn.	EUPHORBIACEAE
<i>Macaranga tanarius</i> (Linn.)	"
<i>Mallotus</i> spp.	"
<i>Ricinus communis</i> Linn.	"
<i>Jatropha curcas</i> Linn.	"
<i>Trema orientalis</i> (Linn.)	ULMACEAE
<i>Acacia farnesiana</i> (Linn.)	LEGUMINOSAE
<i>Bauhinia malabarica</i> Roxb.	"
<i>Leucaena glauca</i> (Linn.)	"
<i>Mimosa pudica</i> Linn.	"
<i>Pithecolobium dulce</i> (Roxb.)	"
<i>Sesbania grandiflora</i> (Linn.)	"
<i>Erythrina indica</i> Lam.	"
<i>Tabernaemontana pandacaqui</i> Poir.	APOCYNACEAE
<i>Lantana camara</i> Linn.	VERBENACEAE
<i>Eugenia cumini</i> (Linn.)	MYRTACEAE
<i>Psidium guajava</i> Linn.	"
<i>Melia candollei</i> Juss.	MELIACEAE

Blumea balsamifera (Linn.)
Pandanus spp.

COMPOSITAE
PANDANACEAE

In grasslands where fires do not occur, accidentally or intentionally, and where the various plant species including the grasses, trees, shrubs, and bushes are left to grow naturally, there is the tendency for the nongrass species to form larger patches among the grasses. The time comes when the area becomes a real mixture of grasslands and patches of secondary growth among the dense grass growths, thus becoming a typical parang area.

When the same area is not touched at all for a long time, the patches of trees, shrubs, and bushes come together to form one large area in a given locality, surrounded mainly by grasslands. A typical area of secondary forest or second-growth vegetation type has eventually developed. Under present circumstances, however, this condition will no longer exist on Dinagat and Siargao because the inhabitants keep clearing whatever tree-shrub-bush growths there are. This practice keeps the particular site as grasslands and even increases the previous grassland area many times. Burning whatever secondary forest patches are already developed in grassland areas, after allowing the patch to grow for several years, and utilizing these areas as farms is very common practice on Siargao and Dinagat, as well as on most islands in the Philippines.

Cultivated Areas. The terrain on the western side of Dinagat Island is not as rough and as mountainous as that on the eastern side. The greater portion of the interior of this island is not ideal for farming or as sites for permanent fields for cultivation. This is especially true after about 1 km. from the western coast toward the interior and across the entire east-west breadth of the island to the extremely rocky eastern coast.

At present, practically all the flatlands, however narrow they are, are planted to various food crops. The crops include upland rice, corn, camote, cassava, beans, and mangos. All the flat and well watered areas, including the small valleys with streams that drain across them, are well developed as permanent ricefields devoted primarily to wet-rice culture. The narrow strips of flatlands along the coasts and the gradual slopes of the hills located close to the sea coast (in some places actually meeting the sea) are all planted largely to coconuts. In the more interior regions, especially along the banks of the streams and up the bases of the hills and lower slopes of the mountains, bananas and *Alocasia macrorrhiza*, both good substitutes for cereals, are raised. Practically all available land areas on Dinagat Island that can be cultivated for the production of food crops are at present utilized for the purpose.

As noted before in this paper, large areas that used to be covered with dense growths of original vegetation or second growth are cleared and utilized as cultivated fields for raising food crops. After several

seasons the fertility of the area declines; and the farmers leave these clearings, allowing them to fallow and to develop whatever type of vegetation cover flourishes.

On Siargao Island there are more cultivated areas than on Dinagat. Its less mountainous terrain, with hills of low elevations, more flatlands, and rolling country, favors the cultivation of a greater part of the island. The crops raised on Siargao are much the same as those on Dinagat.

On both islands, along the edges and sides of the cleared areas and between the clearings, various second-growth species grow. When these clearings are abandoned, the plants, including trees, shrubs, and bushes, serve as the main sources of the fruits and seeds that later germinate, grow, and eventually cover the once-cultivated areas with vegetation. They develop eventually into secondary forest patches.

For any area to develop secondary forest patches, it is imperative that the area be allowed to retain whatever vegetation cover it acquires once it is no longer utilized as a cultivated field. This newly developed vegetation cover should never be cut and burned; otherwise, with the use of fire, especially if applied several times, this particular area becomes grasslands instead of secondary forests. If an area that has been cleared of its vegetation cover previously is to develop into secondary forest preparatory to eventually becoming a patch of original forest of one type or another, then the natural succession of vegetation types should be allowed to proceed without any disturbance from man.

The following plant species, many of them belonging to typical secondary forest vegetation type, are frequently found growing along the edges and margins of clearings and in the areas between them, especially when these cleared areas are situated in flatlands, rolling country, and low hills:

<i>Gliricidia sepium</i> (Jacq.)	LEGUMINOSAE
<i>Erythrina indica</i> Lam.	"
<i>Pithecolobium dulce</i> (Roxb.)	"
<i>Leucaena glauca</i> (Linn.)	"
<i>Sesbania grandiflora</i> (Linn.)	"
<i>Mimosa pudica</i> Linn.	"
<i>Mallotus moluccanus</i> (Linn.)	EUPHORBACEAE
<i>Macaranga tanarius</i> (Linn.)	"
<i>Ricinus communis</i> Linn.	"
<i>Jatropha curcas</i> Linn.	"
<i>Trema orientalis</i> (Linn.)	ULMACEAE
<i>Eugenia cumini</i> (Linn.)	MYRTACEAE
<i>Muntingia calabura</i> Linn.	TILIACEAE
<i>Ceiba pentandra</i> (Linn.)	BOMBACACEAE
<i>Lantana camara</i> Linn.	VERBENACEAE
<i>Premna odorata</i> Blanco	"
<i>Blumea balsamifera</i> (Linn.)	COMPOSITAE

Tabernaemontana pandacaqui

APOCYNACEAE

Poir.

Ficus spp.

MORACEAE

The highly mineralized soils in most parts of Dinagat and Siargao Islands are not ideal for really productive farming, except in some few localities where the soils are more normal in their mineral contents. Also, the strong winds from the Pacific Ocean, both the northeast monsoons and the typhoons, make it very difficult to raise food crops sufficient to take care of the entire needs of the inhabitants of these two islands and the smaller islands and islets around them. Normally, additional food supplies have to come from the nearby Mindanao mainland in order to supplement the food raised on these two islands.

Fauna

Dinagat and Siargao Islands are located at the opening between the Pacific Ocean and the Mindanao Sea, the latter being a very important inland sea in the southern Philippines as it connects directly or indirectly with the other inland seas in the central and western Philippines and meets the China Sea indirectly. The very favorable location of these two islands in waters where embryonic forms of marine vertebrates and invertebrates pass through on their way from the inland seas to the Pacific Ocean is an index of the very interesting and rich marine fauna and flora to be found here. The terrestrial fauna inhabiting these islands, especially the vertebrates, should exhibit the closest affinities with those of Mindanao, the nearest larger island, and, to a lesser degree, with those of Leyte, Panaon, and perhaps even Samar. The close faunistic affinities between the Dinagat-Siargao Island Groups and nearby islands should be strongest between Dinagat Island and these other islands, because Dinagat is close to both Mindanao and the Panaon-Leyte-Samar complex.

The results of the present collections of birds and mammals on Dinagat and Siargao Islands indicate very strong affinities between the mammalian and avian forms of Dinagat and Siargao with those of Mindanao. As early as possible, a more thorough and detailed collecting of and studies on the terrestrial vertebrates should be made, especially in the southern half of Dinagat Island and in the interior regions of Siargao Island. The additional specimens and data obtained in such a project would help much in studies regarding the degree of closeness of the affinities that the terrestrial vertebrate faunas on Dinagat and Siargao have with each other and with those on Mindanao and on the Leyte-Panaon-Samar complex. Simultaneously, collections of terrestrial vertebrates should also be made on as many of the smaller islands and islets comprising the Dinagat and Siargao Island Groups.

A cursory examination of the land mammals and birds collected

on Dinagat and Siargao by the DMNH-MSU Biological Expedition points to the possibility of about three forms of mammals (a gymnure, a rat, and a tree shrew), or maybe even more, that may prove to be distinct from the forms (on the species and subspecies levels) that have been recorded from the highlands of Mindanao Island. A more thorough collecting of mammals from both Dinagat and Siargao and from the small islands and islets around them will no doubt yield more interesting results. Inasmuch as Dinagat and Siargao are islands, it is very possible that the speciation process has already proceeded to such extent that subspecies (and maybe even species) of terrestrial vertebrates have already been evolved on these small islands and that these are distinct from the forms found on the nearby islands of Mindanao, Panaon, Leyte, and Samar.

The problem in the determination of the actual degree of closeness in the affinities of the terrestrial vertebrate faunas between Dinagat and Siargao on the one hand and the mainland of Mindanao on the other is further complicated by the lack of thorough studies in the eastern Mindanao region. There have not been thorough collections of and studies on the terrestrial vertebrate fauna of Surigao del Norte, Surigao del Sur, and Davao Oriental—the provinces closest to the Dinagat and Siargao Island Groups. The same type of studies should be made on Leyte and Panaon Islands, and even on Samar. The knowledge gained from such studies will serve as a basis for comparing the affinities of the terrestrial vertebrate faunas on the various islands.

FAMILY ARDEIDAE HERONS

Dupetor flavicollis flavicollis (Latham, 1790)

Siargao*

Late in the afternoons, during the first three days of our stay in the main camp at Barrio Osmeña, Dapa, we observed a pair of Black Bitterns regularly fly near the campsite. They always flew low over the ricefields nearby and were observed to come from the same direction every time. The two birds always came from a densely wooded low hill, one of several that formed the outer borders of the small valley where the barrio was located. This valley was already well cultivated, with the larger part devoted to wet-rice culture and a much smaller part still occupied by marshes covered with dense growths of tall reeds (*Phragmites*). The pair were regularly observed to alight among a dense patch of these reeds.

Later on in the week, one collector secured a Black Bittern that flew from the dense foliage on top of a tree of medium height, one

* Throughout the text, new records are indicated by an asterisk following the island name.

of many such trees that covered a low hill, forming a dense patch of woods. Another bird soon flushed from the top branch of another tree, also of medium height, and alighted on the top of a nearby tree. This bird was also collected. Immediately after, the collector discovered a nest with two noisy young bitterns in it, located on top of the tree where the second bittern was shot. The two young birds were taken from the nest and brought to the camp, but they lived for only two days on a diet of rat meat. The two adult birds collected in the immediate vicinity of the nest must have owned it. They must also have been the two Black Bitterns that were regularly observed during the first three days of our stay.

The nest was a well formed, roughly circular platform of sticks of various sizes, which was securely placed in the forking of two horizontal smaller branches of a larger top branch. The nest was about 8 meters from the ground. There was a shallow cavity at the center of the platform of sticks where the two young birds stayed securely.

Later in the collecting, another Black Bittern was flushed from a dense patch of tall reeds along a small stream located at the edge of the same small valley where the two adult and two nestling birds had been taken earlier.

This was the only locality on Siargao Island, of all the collecting localities, where several birds of this species were seen and collected. In fact, this was the only island of the many Philippine islands collected in where this species was observed in good numbers within only one small locality. The species had always been rare in collections. It may not be really rare, but its very secretive habits and its selection of a home among dense growths of tall reeds in marshes seldom permits people to see it and meet with it, much less to collect it.

Ixobrychus cinnamomeus (Gmelin, 1789)

Siargao*

The Cinnamon Least Bittern was not a rare bird on both Dinagat and Siargao.

Bitterns of this species were observed several times, singly, in flight over the ricefields and marshy areas in Kambinlio, Loreto, on Dinagat, not far from our campsite. Occasionally, single birds of this species were flushed along the edges of the rivers and streams in Kambinlio and other localities.

On Siargao, birds of this species were seen flying singly over the ricefields and the marshy areas in the small, well cultivated valley in Barrio Osmeña, Dapa, where the main camp was located. Several times, bitterns of this species were disturbed among the tall grass and reeds in the marshy areas where there were small streams in the same small valley.

***Butorides striatus javensis* (Horsfield, 1821)**

Dinagat

The Little Mangrove Heron was quite common inside the patches of mangrove vegetation that were growing along many parts of the western coast of Dinagat. This heron was also frequently observed feeding in the open areas of the seashores close to the edge of the water during low tide and far from the nearest patch of mangrove vegetation. It was frequently observed running actively after some prey in the mud and sand of these exposed parts of the shores.

Occasionally, solitary birds of this species were encountered as far as 1 km. inland from the nearest shore, having followed the rivers or streams to feed on the small animals that were found along the edges of the water.

Several birds of this species were seen actively feeding along the rocky shores of Dinagat and the islets off the Dinagat coast.

From the launch that took us to Siargao Island, we observed several herons of this species on the beaches of Siargao and the islets off Siargao. These birds were flying low or alighting on the shores along the edge of the sea.

***Bubulcus ibis coromandus* (Boddaert, 1783)**

Dinagat*

On Dinagat the Cattle Egret was frequently seen in small groups of about four to six members, feeding actively among the grass and weeds in the newly harvested ricefields, usually in the vicinity of grazing cattle and carabaos. When disturbed, the birds in the group usually flew, one after another, toward the patch of trees growing around the margins of the ricefields, often perching as a group on top of one of the trees. Usually they stayed long on such perches and then flew toward other parts of the cultivated area where there were cattle and carabaos feeding. In this new site the birds resumed their feeding and could be seen actively running among the grass and weeds and even under the feeding cattle and carabaos. One bird or two were sometimes seen on the backs of these animals picking something from their hair. Sometimes a bird would run toward some cattle or carabao, stretch its neck, and pick something from the side or belly of the grazing bovine. This sight was very familiar in many localities, usually close to settlements where there were marshy flatlands fully cultivated and devoted to wet-rice culture.

On Siargao these egrets were seen in the same type of feeding sites as on Dinagat. Feeding groups were seen several times in the fallow ricefields in the small valley where our camp was located. Somehow, none of the collectors ever succeeded in approaching the egrets closely

enough for effective collecting of any of the feeding groups, even for only one specimen.

The Visayans in the areas collected in, both on Dinagat and Siargao, called this species "Talabong" or "Tabong," its common local name in Cebu and Bohol.

Egretta sacra sacra (Gmelin, 1789)

Dinagat*

One of our four specimens is in the white phase.

The Reef Egret was commonly seen, but usually singly, along the rocky shores of Dinagat, Siargao, and the numerous other small islands and islets. In boat trips around Dinagat Island, and from Dinagat to Siargao, we observed reef egrets frequently perched singly on some rocks close to the edge of the sea. During low tides solitary birds were often seen feeding on the sandy beaches of the numerous islets, when the tide left these beaches exposed, if only temporarily.

FAMILY ANATIDAE DUCKS

Dendrocygna arcuata arcuata (Horsfield, 1824)

Dinagat*

On Dinagat Island the Wandering Whistling-Duck was common in the marshy areas of Kambinlio and adjacent localities, just across the river from our main camp yet close to it. The species was also seen in good numbers in the marshy areas on Pulo Island, the islet located off the coast of Loreto and separated from Dinagat Island by a narrow strait hardly 0.5 km. wide. These two natural habitats of the ducks were barely 1 km. from each other.

The ducks went about their feeding activities in flocks of about one to two dozen members. Two or more such flocks were often observed flying about the marshy areas in Kambinlio at the same time, especially when disturbed by farmers nearby on their way to the ricefields. The flocks would eventually alight in one particular area in the marshes and join the members of other flocks that had come earlier. Frequently, as many as 100 birds or more could be seen feeding actively among the tall reeds and grasses, which were found in good patches all over the marshes. When disturbed, the birds usually flushed in large numbers; and after flying about for a time, they joined together and formed flocks. Soon after, the flocks would frequently leave the area at the same time but flying in different directions. Frequently one or more flocks headed for Pulo Island. The flocks that we disturbed on Pulo Island followed the same behavior pattern, and some of them proceeded in the direction of the marshes close to our campsite or to other marshes in nearby localities.

There were several other marshes along the western coast of Dinagat where these ducks were observed in good numbers. Sometimes they were seen in the newly planted ricefields in the flatlands between the coast and the hills on the western side of Dinagat Island.

Several ducks of this species were seen a few times in flight over the ricefields and marshy areas in Barrio Osmeña, Dapa, on Siargao Island. The inhabitants in the locality told us that there were flocks of wild ducks that could be found in the interior of the island, where there were extensive marshlands. Most likely they belonged to the present species.

The Wandering Whistling-Duck is known locally as "Ga-kit'."

FAMILY ACCIPITRIDAE HAWKS and EAGLES

Pernis celebensis steerei Sclater, 1919

Siargao*

The Barred Honey Buzzard was rare on both Dinagat and Siargao. The single specimen of this species was collected on Siargao Island while it perched on one of the higher branches of a second-story tree that grew on the outer part of a small remnant patch of original dipterocarp forest. The patch was at the base of a low hill, one of several that surrounded a small cleared valley planted to rice. The bird had just come from a second-story tree in a patch of mixed remnant dipterocarp and second-growth forest that was found on the lower slopes of a hill on the opposite side. It took some time before the bird could be located from among the many branches that were well covered from the outside by dense foliage. Once the bird was located, one was amazed that he did not see it immediately: it was big enough, and it did not really attempt to conceal itself.

The species was encountered twice on Dinagat Island. In each instance the bird was seen as it flew across a small cleared area from a medium-high tree on the opposite side. On both occasions the bird flew directly into the dense foliage of the tree and settled inside, not on one of the prominent top branches, unlike many other species of birds of prey. On both occasions it was rather difficult to locate the bird from among the many branches of the perching tree. Once located, it did not tarry long but left immediately for another tree quite a distance away.

Haliastur indus intermedius Blyth, 1865

Dinagat

On Dinagat and Siargao and on the other islands around them, large and small, the Brahminy Kite was a familiar sight as it soared on motionless wings, quite high over the sea yet close to the coasts of

these islands. It was always interesting to watch this kite plunge into the sea from quite some height and rise with a fish in its claws, then proceed immediately to a tall tree, usually a prominent one on some ridge along the rocky coast. Here the bird perched, preferably on a bare branch at the very top or close to the top. Frequently the bird was seen perching on the very apex of the tree, and from a distance appeared as if it were sitting on the very top of the green foliage at the center of the tree top. Its white breast could be seen for long distances.

At our campsites on both Dinagat and Siargao, a pair of these kites was staying close by, and in each locality each pair covered the marshy areas in the immediate surroundings of their nesting tree. The pair on Dinagat Island included as their hunting territories the nearby seas, even those around the small island off the coast. The same pair also included the expanse of river that ran close to our campsite for about a half kilometer.

Spilornis holospilus (Vigors, 1830)

Dinagat
Siargao*

On Dinagat and Siargao the Serpent Eagle was frequently seen and heard as it habitually soared high on motionless outstretched wings over the hilly and mountainous regions in the interior parts of both islands. The characteristic loud and piercing notes that this eagle gave out while in soaring flight carried far. The bird soared in wide circles over extensive areas. The circle that it followed in its soaring flight gradually kept on moving away from a particular reference point, until the bird had disappeared in the distance. The territory that it covered in its soaring flight usually included open country, marshy areas, cultivated fields, well wooded hills, and low mountains. After some time, the soaring bird usually selected for its perch a tall or moderately high tree, often one growing sparsely and quite far apart from any other. Dead trees that had been left standing inside newly burned clearings in the forests were favorite perches of this eagle. In addition, solitary tall coconut trees growing in well cleared and cultivated areas, usually on the outskirts of coconut groves immediately bordering cultivated fields, were frequently observed as favorite perches. On any one of these vantage points the eagle perched for some time and examined the surrounding areas; then suddenly the bird would dive downward and pounce on something on the ground. It had been observed many times that the bird stayed for as long as half a minute on the ground and even went among the grasses and weeds in certain sites, which were mixed with dried and partly burned twigs and branches of the trees. More often than not, the eagle flew back to its perch or one nearby

grasping a wriggling snake or lizard in its claws. Once on the perch the eagle usually began swallowing its prey. It usually took a while before the whole prey was consumed.

Four birds of this species were taken on the perch with their entire prey still tightly grasped in their claws. Three of the eagles had a snake, and one had a green long-tailed lizard, most likely *Galotes* sp.

Accipiter trivirgatus extimus Mayr, 1945

Dinagat*

Siargao*

The Crested Goshawk was seldom met with on Dinagat and Siargao. The species was not really rare on these islands, but its secretive habits and its characteristic of staying quiet and motionless on its perch, usually one of many branches inside the semidarkness of the dense foliage, made it difficult to discover this bird, much less to collect it. All specimens were secured when they were accidentally disturbed among the branches and dense foliage of second-story and third-story trees. The trees grew inside patches of original dipterocarp and mixed dipterocarp and second-growth forests that were left on some of the hills and lower slopes of the mountains inland.

Twice during the collecting on Dinagat and once on Siargao solitary birds of this species were accidentally encountered at different times at the edges of small clearings in the small valleys inland, which were well surrounded by hills and low mountains. In each instance the goshawk was seen as it came from inside a medium-high second-story tree with dense foliage, one of many such trees at the edges of a patch of dipterocarp forest, and flew across a small clearing to another second-story tree at the edge of the clearing on the opposite side.

The flight of this goshawk consisted of alternating brief periods of fast wing beats and short glides on motionless and outstretched wings, until the bird reached the tree, about 100 meters away, where it flew directly inside. In a case like this, unless one knew exactly where the bird went, he would have a difficult time locating it from among the many branches and in semidarkness inside the tree.

It is interesting to note that the collection of more than one specimen of this uncommon species within a total collecting period of hardly eight weeks is an exception to our usual collecting results on other trips to the much bigger islands of the Philippines where this species occurs.

FAMILY FALCONIDAE FALCONS

Falco severus severus Horsfield, 1821

Dinagat*

The Oriental Hobby was encountered only three times on Dinagat Island and was never met with on Siargao. One bird was seen perch-

ing on a top branch of a tall dipterocarp tree, one of a few left standing in a new clearing in a small valley surrounded by hills and low mountains well covered with good-sized patches of mixed remnant original dipterocarp and second-growth forests. This bird was the only specimen collected on Dinagat.

At another time a bird seemed to have materialized suddenly out of nowhere, and it was seen only as a blur as it plunged at great speed from a moderate height over a newly cleared area in otherwise still well forested country in the foothills. Just as suddenly, the bird rose and resumed its fast flight over the remaining part of the clearing toward the forest about 300 meters away. We did not see what object it pounced on, and it had nothing in its claws when it rose from the strike.

Still another time a bird suddenly plunged at high speed from a good height right into a flock of low-flying Chestnut Mannikins, *Lonchura malacca jagori*, over an open field planted to rice and located at the foothills of Mt. Kambinlio, Loreto. The victimized flock suddenly broke apart, but it was too late. The hobby secured one bird in its claws, and its speed in flight was very much reduced as it proceeded toward a tall dipterocarp tree at the edge of the field immediately adjoining the remnant dipterocarp forest at the base of a hill.

The species has been found to be widespread in the Philippines but never in large numbers in any given locality. Then, too, the bird is more often seen in fast flight than on a perch.

FAMILY MEGAPODIIDAE MEGAPODES

Megapodius freycinet pusillus Tweeddale, 1877

Siargao*

The Megapode was well known to the inhabitants of both Dinagat and Siargao. Most of the people living close to the hills and mountains well covered with original dipterocarp forests or their remnants were familiar with the habits of this bird. In fact, quite a number of people who traveled regularly across the mountains and hills of Dinagat Island intentionally watched for the bird's characteristic mounds.

Many inhabitants on both Dinagat and Siargao occasionally found Megapode mounds with eggs inside, even in the small areas of flatlands close to the uninhabited coasts, which had been planted to coconuts in good numbers for many years. Most of the reports of Megapode mounds with eggs were on the western sides of both islands. Occasionally, however, people had also found them on the eastern side facing the Pacific Ocean.

The Megapode is not really rare on the numerous islands of the Philippines. It has been reported on both large and small islands. On the average, however, the bird is difficult to collect because of its preference for building its nest in the denser parts of the vegetation

where the light is dim. Furthermore, the bird is agile and runs very fast, alternating with its speedy flight, among the trees inside a forest. This bird, however, can be taken by surprise if the collector walks silently and carefully inside the forest.

FAMILY PHASIANIDAE PHEASANTS

Coturnix chinensis lineata (Scopoli, 1786)

Siargao*

The Painted Quail was a common bird on Dinagat and Siargao, but it was very difficult to collect with the use of collecting guns: it was much easier to secure specimens with the use of traps. Unfortunately our collecting on Dinagat and Siargao was conducted during the period of the year when the rice crops were already harvested in the fields, which were mostly in the narrow coastal plains and in the small areas of flatlands among the inland hills. This small quail was frequently flushed in the harvested ricefields and in the closely adjoining grasslands, especially in the foothills.

The bird had the habit of lying low and very still among the short grass, weeds, and stubble of rice stalks in the newly harvested ricefields. It would flush suddenly almost from under the feet of anyone who came too close. The suddenness of the act, accompanied by the explosive, loud whirring sounds of the rapidly beating wings, often took the collector by surprise. More often than not, he was left standing motionless; even if he shot at the fast-flying bird, he was most likely to miss his target.

In the newly harvested ricefields adjacent to our camp in Kambinlio, Loreto, on Dinagat Island, and in the nearby localities, these small quails were often heard uttering their familiar calls, usually during early mornings and late afternoons. The notes sounded like "Pit-pit-tao," repeated two or three times with a pause between. The first two syllables were uttered in a high pitch, the last one being given in a much lower pitch. The call was repeated several times from one particular location in a field. Usually, these calls would be answered by similar calls from another site in the same general area but coming from quite some distance, but only from one direction, about 100-150 meters away. The exchange of calls lasted for just a few minutes, and then the birds stopped.

In the fields where the rice crops were still standing, the bird was occasionally met with walking on the raised paddies between adjoining fields, but it immediately disappeared among the rice plants nearby once it noticed the intruder. More often than not, it would not flush from among the dense growth of rice plants where it took cover, even if it was still in that particular site.

FAMILY RALLIDAE RAILS

Rallus torquatus torquatus Linné, 1766

Dinagat
Siargao*

The Barred Rail was a common bird on both Dinagat and Siargao and was frequently observed near the coastal areas as well as in the interior. It was often met with in dry open country, in grasslands, and in meadows that were located close to the coasts, as well as in those found inland. This rail preferred open country that was well grown to grass (of both the short and tall types), especially in areas that had patches of marshes distributed among the wide stretches of dry grasslands, with trees, shrubs, and bushes growing among the grass. This species was really a bird of the grasslands and parang country, vegetation types found in the narrow coastal plains and in the small valleys and flatlands among the hills and mountains inland.

This rail was also frequently observed in the abandoned clearings in the small valleys and flatlands among the hills, as well as in the clearings that were still in use and often planted to upland rice, sweet potato, corn, and other crops.

Upon being disturbed in some open areas where grass growths were sparse, this rail often flushed from the ground, flying low and fast, but for only comparatively short distances; it then alighted in the nearest patch of second-growth vegetation where it quickly disappeared, if only temporarily. If the observer kept still and well concealed, after some time the bird would frequently reappear in the more open areas and resume its normal feeding among the low growths on the ground.

The inhabitants on both islands trapped this bird extensively for their food.

Porzana pusilla pusilla (Pallas, 1776)

Dinagat* (1 ♀; April 4)

This species may breed in the Philippines; however, summer and immature specimens do not exist.

The Dwarf Rail was accidentally met with only once on Dinagat and was consequently collected. It was walking along the edge of a clearing in the foothills that had once been planted to rice but was now fallow and grown to Kogon grass. All around the clearing were second-growth forest patches, and close by were some marshes. The bird was not seen again on Dinagat and was not seen at all on Siargao Island.

Poliolimnas cinereus ocularis Sharpe, 1894

Dinagat
Siargao*

The White-browed Rail was common in the ricefields and marshy areas in the flatlands close to the coasts and in the interior on both

Dinagat and Siargao. It was frequently seen feeding along the edges of the ponds and small streams that were found in good numbers among the marshes and ricefields, especially along the western coast of Dinagat and in both the coastal marshy areas and the ricefields in the interior of Siargao.

Occasionally this small rail was observed swimming in the deeper portions of the marshes, in and out and around the clumps of reeds that grew in abundance in these areas. It was not at all a shy bird, and it allowed the observer to approach fairly close before it flushed or ran toward the dense patches of reeds or Kogon close by.

It was also frequently seen feeding on the mud inside the nipa swamps along the edges of streams, especially where the streams opened to the sea.

Amauornis phoenicurus javanicus (Horsfield, 1821)

Dinagat*

The White-breasted Swamphen was quite common on both Dinagat and Siargao, but for some reason the species was successfully collected on only Dinagat, not Siargao.

This bird was often met with in the ricefields and marshes on both islands. It stayed usually in the immediate vicinity of the numerous freshwater streams and small ponds found in the ricefields and marshes. It preferred to stay close to the dense patches of mixed growths of tall grass, bushes, shrubs, and trees, mostly second-growth forest trees.

The species ranged from near the seacoasts, especially on the western side of Dinagat, and from all around the whole island of Siargao, including the foothills and even into the interior, especially in rolling country.

This swamphen was frequently observed feeding along the edges of the freshwater streams and ponds in the narrow flatlands and coastal plains along the western coasts on Dinagat Island. On Siargao Island the species was often observed feeding on the muddy bottoms of the marshes, as well as in the clean areas between the patches of the dense mixed growths of tall grass, bushes, shrubs, and trees found growing in strips along the freshwater streams and at the edges of ponds. The streams drained the regions among the mountains and hills in the interior of Dinagat and traversed the small valleys and flatlands among the hills. From there they continued their courses in the ricefields and marshes found in the foothills, finally ending at the sea. Some birds were observed walking sedately and jerking their tails from time to time as they fed on the muddy grounds in the nipa swamps.

In the early mornings and late afternoons, the loud notes of this species could often be heard issuing from some dense patch of mixed reeds, tall grass, bushes, shrubs, and a few trees, which lined the banks

of the good-sized river near our campsite in Kambinlio, Loreto, on Dinagat. The loud notes sounded like "Kor-wak-wak, Kor-wak-wak . . . ," repeated several times one after another, followed by a long interval of silence. Usually, when not disturbed, the bird followed the first set of notes with another set and then remained silent thereafter.

Occasionally, solitary birds were observed wading in the shallow waters of some freshwater stream, and from time to time picking up something from the water. With the least disturbance the birds immediately flushed into the nearest patch of vegetation growing on the river bank nearby.

Gallicrex cinerea (Gmelin, 1789)

Siargao*

The Watercock was not really uncommon on Dinagat and Siargao because its characteristic notes, which carried rather far, were heard often enough coming from some dense clumps of reeds or tall grass (*Saccharum spontaneum*) in the marshes and ricefields near our main campsites on these islands. The notes were loud and resonant and sounded like "Toob-toob-toob . . . ," repeated several times, then stopped, then started again after some interval of silence. These loud, booming notes were usually heard at any time in the evening, at dawn, and during early morning.

On both Dinagat and Siargao, the Watercock was seen from a distance several times as it fed singly in the open spaces of the marshes and ricefields in the foothills, always in the immediate vicinity of dense patches of reeds or tall grass and usually adjacent to good-sized areas of dense second-growth forest vegetation that grew on the nearby hills.

Occasionally, on both islands, solitary birds were observed from quite some distance, each time standing on an unstable platform formed by the bent and broken ends of the reeds and tall grass, usually near the center of dense clumps of these plants far out in the marshes. In each instance the bird perched on this grass platform for some time, almost motionless but swaying with the wind, until it flushed and transferred to another site in the marshes or ricefields not far away.

The flight of the Watercock was not like that of most other marsh birds. When flying, it held its neck stretched out in front, reminding one of a wild duck in flight, but with the much longer legs stretched out behind it. Its flight was usually fast but appeared rather labored, resulting from the very rapid wing beats. The bird usually flew low over the tops of the reeds or grass, into which it immediately alighted and disappeared. It did not usually fly long distances, and in alighting it frequently selected sites close to dense patches of vegetation—reeds, tall grass, or mixed bush-shrub growths.

FAMILY ROSTRATULIDAE PAINTED-SNIPE

Rostratula benghalensis benghalensis (Linné, 1758)

Dinagat* (1 ♀; March 23)

The Painted-Snipe was not commonly met with in the ricefields and marshes, both of which are ideal habitats for the species and both of which were plentiful on Dinagat and Siargao.

On Dinagat it was flushed twice from among the grass and weeds growing in the vacant ricefields, and three times it flew from the small open spaces among the clumps of reeds growing in the marshes close to the foothills. Both sites were in the immediate vicinity of our main camp in Kambinlio, Loreto, in the small coastal plain between the coast and the hills.

On Siargao the bird was flushed only once—in the marshes adjacent to the ricefields close to the foothills of Barrio Osmeña, Dapa, in the immediate vicinity of our main camp.

It is possible that the species is not really rare on both islands, but that the bird had the habit of just staying motionless among the reeds, grass, and weeds in the ricefields, open meadows, and marshes, not flushing unless approached too closely.

FAMILY CHARADRIIDAE PLOVERS

Pluvialis squatarola (Linné, 1758)

Dinagat* (April 4)

The Black-bellied Plover, or Gray Plover, was met with only once—on an exposed tide flat during low tide on the coast of Dinagat. One bird was collected out of the four birds that formed the flock. This was the only occasion when the species was seen, yet at the time there were numerous migrant shore birds on the exposed portions of the shores, especially on Dinagat.

The species is a rare winter migrant in the Philippines and has been recorded on only very few islands, unlike the very common Pacific Golden Plover, *Pluvialis dominica fulva*.

Pluvialis dominica fulva (Gmelin, 1789)

Dinagat*

The Pacific Golden Plover, one of the common winter migrants in the Philippines, was encountered several times in flocks of about a dozen members or slightly more. It fed among the short grass, weeds, and remaining rice stubbles in the recently harvested ricefields in Kambinlio, Loreto, and neighboring localities on Dinagat Island. Flocks of this species were also observed several times feeding among the low grass and weeds in the marshy areas close to the foothills of Kam-

binlio, not far from our main camp. During low tides this species was commonly seen in flocks of about a dozen or more members feeding on the exposed tide flats in the immediate vicinities of other shore birds that were also found in good numbers along the seashores during low tides.

Once, a small flock of about six members was seen feeding in a small clearing among the short grass and weeds mixed with foot-high upland rice on the lower slopes of a low mountain that was located in the interior toward Mt. Kambinlio.

The species was not observed in the ricefields and marshes on Siargao, although these places were most likely habitats. Perhaps its absence is attributable to the lateness of the season and the fact that most birds of this species were already on their way back to the breeding grounds in northern Asia.

Charadrius mongolus mongolus Pallas, 1776

Dinagat* (1 ♀, March 29; 1 ♀, April 2)

The Mongolian Plover was met with several times in small flocks of six to 10 members as it fed during low tides on the exposed mud flats along the coast of Loreto and neighboring localities. Frequently the flocks of *Charadrius mongolus mongolus* and *Pluvialis dominica fulva* were seen feeding on the same mud flats, near each other and together with many other species of shore birds. Strangely enough, this species was never observed feeding in the marshy areas and ricefields just a little inland from the coast, such as those found in Kambinlio, Loreto.

On Siargao this migrant species was never observed in the marshes and ricefields, as is also true of the Pacific Golden Plover. The reason might have been the location of the ricefields and marshes where our collecting was carried on (in inland areas quite far from the coast), as well as the lateness of the season.

FAMILY SCOLOPACIDAE SANDPIPERS

Numenius phaeopus variegatus (Scopoli, 1786)

Dinagat* (1 ♂, March 31; 1 ♀, April 1)

The Whimbrel was frequently seen feeding on the exposed sandy-muddy tide flats during low tides along the coast of Loreto on Dinagat Island. In our trips by motor launch between Surigao and Loreto, Whimbrels were frequently seen in pairs or in flocks of varying sizes feeding on the exposed tide flats along the western coasts of Dinagat Island and on the coasts of the small islands and islets nearby. During the low tides, when larger areas of the tide flats were exposed, the Whimbrels, usually singly or in pairs, were seen feeding with other species of shore birds.

In a few instances we observed large numbers of Whimbrels (50-60 birds) densely concentrated on some remaining small and narrow strip of sandy-muddy bottom, a short distance off the coast of some larger island. The birds were concentrated in quite large numbers by the tide as it covered what used to be a large exposed area of tide flat. As the area of exposed bottom gradually diminished, small groups of the Whimbrels (5-6 birds) took off in different directions, but always toward the beaches of the larger island nearby. Eventually all the Whimbrels left the site and by that time the fast-rising tide soon covered the whole area, leaving no trace of exposed land or bird.

The flight of a flock of Whimbrels is usually accompanied by their loud notes that can be easily heard quite a distance away. The notes are so characteristic of the species that once an observer has heard them, he can easily remember them and associate them with Whimbrels.

The local inhabitants of Dinagat, like those in many localities in other parts of the Philippines, hunt and trap the Whimbrel extensively for its ample and good-tasting meat.

Tringa hypoleucos Linné, 1758

Dinagat*

The Common Sandpiper was frequently encountered singly along the numerous small streams in the ricefields, marshes, and open meadows in the lowlands, as well as along the small streams found in the densely wooded areas inland, among the hills and mountains in the Mt. Kambinlio localities, and other nearby areas. The bird often stayed along the edge of the water and, from time to time, ran fast on the dry, sand-gravel stream bottom. It was also seen singly feeding in the more open parts of the ricefields and marshes, especially along the many small streams that abounded in these areas between the coast and the foothills. Occasionally, single birds were encountered in the narrow strips of sand-gravel shores along the coast of Loreto.

On Siargao the species was not really rare, even though no specimens were taken on this island. It was flushed many times along the small streams found in the interior, traversing the ricefields and marshes in the flatlands among the hills.

The rapid up-and-down movements of the head and tail as the bird walks or runs are identifying characteristics of this species of winter migrant shore bird. They easily differentiate it from several other winter migrant shore birds of very similar external appearance.

Tringa incanas brevipes (Vieillot, 1816)

Dinagat* (1 ♂, 2 ♀, March 24-31)

The Gray-tailed Tattler was met with several times, usually in flocks

of a dozen or more members feeding on the exposed sandy-muddy tide flats during low tides along the coasts of Loreto and nearby localities on Dinagat. The flock often fed in the same site where quite a number of other species of winter migrant shore birds were also actively feeding. When disturbed, however, the flock flushed as one unit and usually transferred the site of feeding to another area not far from the former one.

This migrant shore-bird species was never met with in the rice-fields and marshes in the interior parts of Siargao, even in the sites where other winter migrant shore-bird species were observed feeding regularly.

The Gray-tailed Tattler appeared to be more at home in the tide flats along the coasts than in the open marshy areas in the interior.

***Gallinago megala* Swinhoe, 1861**

Dinagat* (1 ♀, March 13)

The Marsh Snipe was flushed a number of times in the wetter parts of newly harvested ricefields and the adjoining marshes in the localities where our main camps were established on both Dinagat and Siargao. The bird was usually disturbed accidentally among the mixed low growths of grass, bushes, and weeds in the marshy areas, in the adjacent open meadows, and in some of the recently harvested rice-fields which had more moisture than the others in the area. Occasionally, a bird was flushed among the mixed growths of low grass, bushes, and weeds that thrived luxuriantly along the banks of the small streams, which were common in the lowland areas and which came from the hills and mountains in the interior. On Dinagat these small streams were found in the narrow flatlands close to the coast; on Siargao they were in the interior in the small valleys and flatland areas surrounded by the hills far from the coasts.

The bird has the habit of flushing suddenly and unexpectedly when one gets close to it. Its fast start from the ground is usually accompanied by a soft croaking note that closely sounds like "Piak." The bird zigs and zags very fast until it reaches some distance away from the intruder, where it continues in a low and straight horizontal flight at a very high speed and then climbs upward. The bird usually doubles back and passes its former location, proceeds some distance away, and then suddenly swoops down and settles abruptly on the ground among a tract of mixed growths of low grass, bushes, and weeds in an open field, meadow, or marsh. All the while that it is flying overhead at a very fast speed, the bird gives out at irregular intervals its hoarse croaking note.

FAMILY COLUMBIDAE PIGEONS and DOVES

Treron vernans vernans (Linné, 1771)

Dinagat*

Only one specimen of the Pink-necked Green Pigeon was collected on Dinagat and none was taken on Siargao, yet the species was not really rare, or even uncommon, on both islands. Somehow the collectors just did not have the opportunity to come upon any of the good-sized flocks that this pigeon species usually formed (as observed on the other Philippine islands). It is possible that during the time of the expedition on both Dinagat and Siargao the species was breeding; so the birds had not yet formed their flocks. Several times on both Dinagat and Siargao groups of three or four birds were observed flying around the countryside, but more frequently they were observed going about in pairs.

Several times pairs were seen perching on naked branches at the tops of some trees growing at the outskirts of small patches of secondary forests, or in grasslands, open country, parang vegetation, or even at the edges of the well cultivated fields and farms on both Dinagat and Siargao. The following tree species were the favorite perches of this pigeon species in open country: *Erythrina indica* Lam., *Sesbania grandiflora* (Linn.), *Ceiba pentandra* (Linn.), and *Nauclea junghuhnii* (Miq.).

Several times the species was observed feeding in pairs on the fruits of the following tree species that grew at the edges of the small patches of secondary forests, in parang, in grasslands and open country, inside small cleared areas on some of the hills at low elevations, and along the edges of cultivated fields and farms in the plains and foothills: *Antidesma ghaesembilla* Gaertn., *Muntingia calabura* Linn., and *Ficus* spp.

The local inhabitants, especially those living on the farms, reported that some nests of this pigeon species had been found a few times in the patches of mangrove forests along the coasts of Dinagat and Siargao. More frequently, however, the nests of this species were found in trees inside second-growth forests, which were found as small patches on the hills inland, in parang vegetation, in grasslands and open country, and even along the edges of the well cultivated fields and farms on both Dinagat and Siargao.

The Pink-necked Green Pigeon was known locally as "Punai."

Phapitreron leucotis brevirostris (Tweeddale, 1877)

Dinagat

Siargao*

The White-eared Brown Fruit Dove was a common bird on Dinagat and Siargao. It was frequently met with singly in almost all the types of

vegetation, original or secondary, that were found on both islands. It was even observed quite often in well cultivated areas and farms, feeding among the fruiting trees that were part of the mixed growths of trees, shrubs, and bushes planted as hedges around the farms. It was not observed at all inside the mangrove forests on either island. On the other islands of the Philippines, however, this species was occasionally seen in the outskirts of mangrove forests, especially in the immediate vicinities of beach forests.

The bird showed decided preference for low and medium-high trees and shrubs with dense foliage, which grew among other trees and shrubs inside the good-sized patches of forest vegetations of almost all types on both islands. Its altitudinal range extended from sea level, among the hills and mountains, and up the mountain peaks, especially on Dinagat. At the higher elevations of the mountain peaks on Dinagat, such as Mt. Redondo and Mt. Kambinlio, the species was occasionally seen and heard among the dense growths of trees and shrubs at the bottoms of the deep ravines and along the high, sheer sides of the mountain streams in the places that were well sheltered from strong winds.

On Siargao, where the hills were rather low, this dove was usually encountered along the numerous small streams among the hills, as well as among the dense patches of second-growth forests that covered almost entirely most of the hills.

Occasionally, this bird was heard and seen as it perched on the frond of a coconut tree, one of many inside a grove in well cultivated lowland areas and up the lower elevations on the hills.

Even though the bird was not seen, its very characteristic mournful notes were often heard issuing from among the dense mixed growths of trees, shrubs, and bushes, which served as hedges in the well cultivated areas and farms.

The farmers and other inhabitants living among the hills and mountains of Dinagat and Siargao kept this dove as a cage bird. Frequently, two birds were found in one cage. Occasionally, the birds would call and other birds in the surrounding forest growths would respond and eventually come and perch on a nearby tree or shrub, close to the house where the cage birds called.

On Dinagat and Siargao the species was known as "Alimukon" or "Limukon," the common East Visayan name for it.

***Phapitreron amethystina mindanaoensis* Manuel, 1936**

Dinagat*

On Dinagat the Amethyst Brown Fruit Dove was encountered inside the patches of original dipterocarp forest and transition forest found in the lowlands, small valleys, and flatlands among the hills and mountains, as well as in the scrub forests on the slopes of these moun-

tains, although not as frequently as in the lower elevations.

This dove was usually observed perching among the branches of low and medium-high trees with dense foliage, where the bird stayed undetected unless it flushed when someone approached the perching tree accidentally. It was encountered often singly and less frequently in pairs. Occasionally, however, six to a dozen of the species were accidentally discovered feeding on fruiting trees, such as figs, but the birds always flew away singly or at most in pairs and proceeded in different directions.

Very rarely the bird gave out its mellow and mournful notes, which bore some resemblance to the notes of some local cuckoos.

The species was not seen on Siargao either in original vegetation or in second growth.

***Ptilinopus occipitalis* G. R. Gray, 1844**

Dinagat*

Rarely was the Yellow-breasted Fruit Dove actually seen on Dinagat Island, although its soft and mournful call was frequently heard inside the patches of dense original dipterocarp forest. The species was not seen or heard at all on Siargao.

Typically, the bird was frequently heard calling from a moderately high tree with dense foliage, one of the numerous second-story trees growing inside patches of original dipterocarp forest in the small valleys and narrow flatland strips among the hills and mountains. The call could usually be traced easily enough to the very tree where it came from, but it was always difficult to locate the bird itself from among the numerous branches, which were in the deep shade of the dense foliage of the perching tree. The call had a ventriloquial effect, so that even when the observer was under the very tree from which the call came, most of the time he would still not be able to see the bird on its perch. After some time of very careful search among the numerous branches, he would finally see the bird sitting very still on its perch. All the time that the observer had been trying his best to locate the bird, it was actually sitting motionless on a branch in full view. The calls, however, coming regularly but interspersed with intervals of silence, seemed to have come from a different direction. In most cases, especially if the observer was not very careful in concealing himself, the actual moment of discovering the bird would also be the time for the bird to fly away.

Unless disturbed, the calling bird usually stays on the same perch. Then it flies away, and soon its calls, which resemble the sound of "Whoo," are repeated in another tree some distance away, but in the same forest patch.

***Ptilinopus leclancheri leclancheri* (Bonaparte, 1855)**

Siargao*

The Black-chinned Fruit Dove was not met with on Dinagat Island. The species was encountered only twice on Siargao; both times the birds were seen in pairs as they fed silently on the small fruits of a fruiting forest tree of medium height inside a patch of mixed dipterocarp remnant forest and second growth. On each occasion, the mixed dense forest patches were located in the interior of Siargao on the lower slopes of hills at the edges of a small valley that was well cultivated and planted with rice.

On the other Philippine islands where this species has been collected, the birds were frequently encountered through sheer chance. However, if the observer located a fruiting tree where this species had been observed feeding, and if he concealed himself well, most of the time birds of this species were seen visiting the tree to feed on its fruits. Several times, in fact, about three to four birds were observed feeding in the same tree at one time, but when disturbed, they flew singly or in pairs in different directions.

The species usually stays inside dense dipterocarp forest areas or patches on the various islands where it occurs.

***Ducula aenea aenea* (Linné, 1766)**

Siargao*

The Green Imperial Pigeon was seen several times on Dinagat, but always at a distance. It was also encountered several times on Siargao and was successfully collected.

On both islands the species usually went about in pairs or in flocks of six to a dozen members or slightly more. They were seen either flying over the densely forested hills and mountains or perched on some bare branches at the top of tall trees. Most often these trees were located at the edges of forest patches that were either dipterocarp or mixed dipterocarp and secondary forest types growing on the hills, especially the lower slopes.

On Dinagat pairs or flocks of this species were occasionally observed feeding on the fruits of tall fig trees, *Ficus* spp., which were growing around the edges of clearings in the forests, especially on the hillsides and lower mountain slopes in the localities of Mt. Kambinlio and Mt. Redondo. Usually, when the feeding or perching pigeons were disturbed, they flushed from the tree as one.

This species of Philippine pigeon cannot be mistaken for any other large pigeon species in the Philippines because it is the most widely distributed of the Philippine large pigeons that normally go about the

countrysides on most of the islands of the archipelago. The other Philippine species of large pigeons normally go about singly or, at the most, in pairs.

The species has a very characteristic loud call that is given out from time to time, usually while the bird is on a perch. Most often the call is soon answered by a similar loud call from another bird perching some distance away.

It is not uncommon to observe several birds of this species perching on the top branches of some tall tree on the high ridge of a hill. One will hear the characteristic loud call coming from this vantage point, and soon a similar loud answering call will come from another ridge of another hill. A careful examination of the surrounding hills will often reveal one, a pair, or several of this species perching on the top branches of some tall tree on a neighboring ridge. The exchange of calls may continue for some time, and then the bird or birds from one of the perching trees will flush and fly toward the other group, joining them among the top branches. These birds must actually belong to the same flock. In the course of their feeding, however, they get separated by some disturbance—hence the reunion of the members of the flock after locating one another.

The local name of this large pigeon is "Balud" or "Baud," the same local name given this species on many islands of the Philippines.

***Ducula poliocephala nobilis* (Hachisuka, 1931)**

Dinagat

On Dinagat Island the Pink-bellied Imperial Pigeon was actually seen only three times, but its characteristic low booming notes were heard many times inside the dipterocarp forest areas among the hills and mountains, especially at different elevations in the Mt. Kambinlio and Mt. Redondo localities. The species was not seen or heard at all on Siargao Island.

All three actual sightings of this large pigeon on Dinagat were of single birds perched among the dense foliage of the top branches of tall fruiting trees. In all sightings of the bird, the fruiting trees were growing at the edges of small clearings on the slopes of hills and mountains at various elevations, but never where only scrub forests grew. These clearings were planted at the time with upland rice.

As on the numerous other islands where it had been recorded, on Dinagat this species was more often heard than seen. Unless the bird was actually observed as it flew from one branch to another in the same fruiting tree, it was always very difficult to discover among the foliage. Once located, however, it was easy enough to follow from branch to branch and from one feeding tree to another if these trees were not very far apart.

The bird normally went about its feeding activities singly or, at most, in pairs.

On the other islands where this species has been recorded, it is not unusual to find three to six, or even more, occasionally feeding actively on the fruits of the same feeding tree. When disturbed, the feeding birds usually fly one by one, or, rarely, in pairs, but they proceed in entirely different directions. When watched carefully, they were usually seen proceeding to different trees. The birds found feeding in the same fruiting tree were not really members of a flock, as in *Ducula aenea*, but were actually accidentally congregated in the same feeding tree at that particular time.

The inhabitants of Dinagat who came from the East Visayan islands, such as Cebu and Bohol, called this large pigeon as "Hagum-hum" or "Agum-um," the local names by which the Pink-bellied Imperial Pigeon is known in the East Visayas.

***Columba vitiensis griseogularis* (Walden and Layard, 1872)**

Dinagat*

On Dinagat Island the Metallic Wood Pigeon was occasionally encountered singly or in pairs in some perching trees, typically tall ones with heavy foliage at the top. The trees grew inside the patches or areas of dense forest vegetation of various types found at all elevations on the hills and mountains in the localities of Mt. Kambinlio and Mt. Redondo. In most cases this pigeon, singly or in pairs, was disturbed accidentally among the branches of perching trees in the dense patches and areas of dipterocarp forest that grew in the small valleys and narrow areas of flatlands among the hills and mountains. It was also encountered in perching trees at higher elevations, such as in the transition dipterocarp-midmountain forests and in scrub forests on the higher slopes of the mountains.

The species was not encountered at all on Siargao in the areas where we collected, mostly in the interior of this island among the well vegetated hills. It is very possible that our collecting activities on this island were not as extensive and as thorough as they should have been, hence our failure to discover the species there. Most likely, more thorough collecting work will result in securing this pigeon species among the densely forested hills in the interior, considering that both the vegetation types and the habitat types where this pigeon species lives are present in most parts of Siargao Island.

The species was very secretive. Although one or a pair of these birds was staying in a feeding tree and had been there for some time, it was always by sheer chance that the collector ever discovered the bird among the branches and dense foliage of a particular tree. In some of the fruiting fig trees, this species was occasionally observed feeding on

the fruits with pigeons of other species, such as *Ducula aenea* and, more rarely, *D. poliocephala*. *D. aenea* was the easiest pigeon species to locate in a feeding tree where other pigeon species were feeding because of its frequent and active transfers from branch to branch, often even flying out of the tree in the process. *D. poliocephala* and *Columba vitiensis* were always difficult to locate in a feeding tree among other pigeon species because of their secretive habits, even in the course of feeding on fruits borne on the various branches. Both these latter species minimized their movements in the feeding tree.

On the other islands of the Philippines where this species occurs, small flocks of six to a dozen members are occasionally encountered as they fly from one feeding tree to another in a forest area, especially in typical midmountain forest, which grows at the higher elevations of mountain slopes.

***Streptopelia bitorquata dusumieri* (Temminck, 1823)**

Dinagat*

The Philippine Turtle Dove was a common bird on Dinagat and Siargao. On both islands this species was frequently encountered in the newly harvested ricefields and other cultivated areas of the lowlands, in the open meadows and rolling country of the foothills, and among the parang and grassland vegetation. The bird usually went about singly or in pairs, but occasionally as many as a dozen or more would be seen on the ground feeding on the fallen rice grains.

On both Dinagat and Siargao, as well as on the other Philippine islands, this dove was not shy at all: it readily allowed humans to come close to where it was feeding in a field. The bird frequently alighted on the ground in the newly harvested ricefields, even in places quite close to people who were then harvesting the rice crops in neighboring fields. When approached too closely, intentionally or accidentally, the bird would usually flush and alight on a branch or some low tree nearby, usually at the edge of the fields. After a short time it would fly and alight on the ground in a nearby field and resume its feeding on the fallen rice grains.

Once in a while a bird would be seen perching on the bare branch of a low or medium-high tree at the edge of a cultivated field or open meadow. It would then begin calling, its mournful notes resembling the syllables "Tuk-m-m-m, Tuk-m-m-m . . ." repeated several times; then it would stop. The bird would usually leave its perch, alight on the ground nearby, and begin feeding on seeds of the weeds and grass that grow there. Usually, other doves of the same species were already feeding in the site ahead of the bird that had just come to join them. When disturbed, they usually fly singly or in pairs toward different directions, showing that the birds feeding in the same site or close to

one another do not really belong to a regular flock. On the islands where they occur, the birds of this species have never been observed to form regular flocks as they go about their feeding activities.

Streptopelia chinensis tigrina (Temminck, 1810)

Dinagat*

Siargao*

The Spotted Dove was a very common bird on Dinagat and Siargao. Like the Philippine Turtle Dove, *Streptopelia bitorquata dusumieri*, the Spotted Dove was frequently encountered in the cultivated fields (including ricefields), in open meadows, parang, and grassland vegetations, and in the open country as a whole—all in the lowlands and in the immediate vicinities of human settlements.

The ever-widening spread and distribution of the Spotted Dove among many islands in the Philippines within the last 30 years or so is a very interesting case history of the successful invasion by a bird species into a country where it used to be considered very rare. At present it is considered a very common and widespread species on many of the large islands in the region closest to its original home. On the larger islands of the Philippines located in the southern regions, such as Mindanao, Negros, and Cebu, the Spotted Dove has successfully established large populations in the same localities and habitats as the resident species, *S. bitorquata dusumieri*, and in densities that are now much higher than those of the native form. In many localities on Mindanao, Negros, and Cebu the Spotted Dove has become even more common and has replaced the local resident turtle dove species. The Spotted Dove has succeeded in gradually driving out the native form from most of the areas close to human habitations so that the native form is presently confined more to the areas far from man's settlements. As late as 15 years ago, when one traveled on the roads in the lowlands of Mindanao, Negros, and Cebu, he could meet many Philippine Turtle Doves on the roads and on the farms and open meadows along the roads. At present, one sees only the Spotted Dove: it is rare to meet with the Philippine Turtle Dove in these parts. In order to meet with good numbers of the Philippine Turtle Dove, it is necessary to go to the foothills, especially among the ricefields.

The invasion of the Spotted Dove into the Philippines started from the west-southwest via the islands of Balabac and Palawan and from the south-southwest via the southernmost islands of the Sulu Archipelago. From these two directions, the species gradually spread throughout the more northern islands. Thus, from the Sulu Archipelago the birds successfully reached the Zamboanga Peninsula, and from there spread throughout the entire island of Mindanao. A collecting expedition sponsored by the Field Museum of Natural History to Zamboanga

Peninsula noted that there were a number of Spotted Doves along the roads and in the open country along the roads toward the town of Pagadian in 1948 and along the roads toward the town of Katipunan in 1949. The Philippine Turtle Dove, however, was still the more common species in these parts.

It is possible that from Zamboanga Peninsula the Spotted Dove succeeded in migrating to Negros Island, and from the latter, to Cebu. The migration of the Spotted Dove from southern Negros to southern Cebu was actually proved by the results of the bird banding project carried on by the Migratory Animal Pathological Survey of the U.S. Armed Forces Institute of Pathology and later by the U.S. Army Research and Development Group (Far East). In addition, the Spotted Dove, being a common cage bird, could have been carried by man from island to island or from one part of an island to other parts. It did not take long for the species to become very common on Mindanao, Negros, and Cebu.

The present distribution of the Spotted Dove includes the islands of Balabac, Palawan, many islands of the Sulu Archipelago, Mindanao, Negros, Cebu, Leyte, and Dinagat and Siargao. More collecting will no doubt yield records of this species on Bohol and the numerous islands between Bohol and Cebu on one side and Bohol and Leyte on the other. The species should be recorded now on Panay and the other islands nearby.

On Dinagat and Siargao the present densities in the populations of *S. chinensis tigrina* and *S. bitorquata dusumieri* are still about equal. It will not be surprising if in another 10 or 15 years the Spotted Dove will become the more common form on these two islands.

The notes of the Spotted Dove are moderately loud and closely resemble the syllables "Tek-kuk-kurr" repeated several times after some intervals between calls. These notes are usually given from the branches of some low or medium-high trees that grow along the edges of cultivated fields or meadows in well cultivated localities close to human settlements. The Philippine Turtle Dove will gradually be driven into the foothills or among the clearings in the lowlands close to the hills. There will be some areas where the two species come together and where they will be about equal in population densities.

Chalcophaps indica indica (Linné, 1758)

Dinagat*

Siargao*

The Green-winged Ground Dove was a common species on both Dinagat and Siargao, but its quiet and secretive habits as it went about singly on its feeding activities made it difficult to discover, even in its known habitats on the ground inside original or secondary forest areas

or patches or inside any dense patch of mixed tree-shrub-bush growths in otherwise well cultivated countryside. This ground dove was more often seen on the wing as it flew at good speeds, threading its way among the trees, shrubs, and other low growths in the forest in rather deep shade. One might accidentally come upon a bird as it fed singly on the ground along the bank of some small and shallow creek inside a forest patch. A bird might even be surprised as it fed on a dried-up streambed during the dry season, among quite heavy vegetation cover. On Dinagat and Siargao the species was frequently disturbed among the dense growths along the banks of heavily shaded streams.

On the other islands in the Philippines this dove was seen several times passing in fast flight through open windows of the small Kogon-bamboo huts located along the edges of the clearings in newly opened areas in the interior. Without reducing its speed in flight, the bird would fly through the open windows when the two windows on opposite sides of the small huts were open. Accidents sometimes happened, although rarely, when a fast-flying bird hit a wire strand on which abaca fibers or manila hemp were hung for drying.

This ground dove was also disturbed from the ground while feeding under coconut palms inside coconut groves close to human settlements, especially in the foothills.

The species is not really rare, but its shy and unobtrusive habits make it difficult to discover, unless disturbed accidentally. When so disturbed, it flushes from the ground and at a good speed flies to another feeding site, again on the ground, in some well covered spot inside a well vegetated area, quite far from the original place.

Gallicolumba luzonica criniger (Pucheran, 1853)

Dinagat*

On Dinagat Island the Bleeding-heart Pigeon, or Puñalada, was not really rare, although it was not as frequently encountered by the collectors as it should have been. The species had the habit of going about its normal feeding activities on the forest floor, singly and with the least disturbance of the conditions in the feeding site. It was usually by pure chance that a bird was discovered feeding actively on the forest floor, even considering the fact that all the time the pigeon was feeding in relatively clean areas with the least forest undergrowth, although the ground might have quite an amount of litter consisting mainly of dried leaves.

This pigeon was usually encountered alternately walking and running briskly on the forest floor in areas where the undergrowths were rather sparse. When the observer walked quietly and cautiously, a bird feeding nearby would usually continue its brisk alternate walking and running,

without flushing at all. Meanwhile, it would usually head in a direction away from the intruder. When the observer would stop following the bird, even if for only a very brief moment, he was very likely to lose it among the dry leaves and trunks of the trees. He would have a difficult time locating the bird again, yet the pigeon might have been near all the while.

The natural habitat of the Bleeding-heart Pigeon on Dinagat Island, as on the other islands of the Philippines where the species has been recorded, was inside the areas and large patches of original or remnant original forests, especially inside the dipterocarp and transition dipterocarp-midmountain types in the lowlands and in the lower elevations of the hills and mountains. The species was also encountered inside forests that grew on the slopes of the mountains in the localities of Mt. Kambinlio and Mt. Redondo up to about 400 meters above sea level, where the scrub forests covered practically the entire mountain slope. The bird seemed to prefer staying on the floor of the dense forests growing in the small valleys and small strips of flatlands among the hills and mountains.

When really disturbed, the bird usually took off, but only for short distances of about 5-10 meters. It then settled again on the forest floor and resumed its brisk walking alternated with running.

The species was not collected on Siargao, although with more extensive and intensive collecting inside the forests among the hills in the interior, the bird might still be taken there. It is true that the forests that would be ideal natural habitats for the species are already much reduced on Siargao, compared to those on Dinagat. Nevertheless, the fact is that the remnant patches of forests found on Siargao are the types most likely to serve as the natural haunts of the species.

This ground-loving species was not encountered as frequently as the species that normally perched among the branches of the trees in the same type of habitat. In general, ground-loving birds are missed more easily than actually seen, although all the time they might be inside a particular forest area feeding and carrying on all their normal life activities.

It is a wonder that the Bleeding-heart Pigeon is so inconspicuous, for its large and prominent blood-red spot on the chest should easily give the bird away as it alternately runs and walks on the forest floor.

FAMILY PSITTACIDAE PARROTS

Kakatoe haematuropygia (P. L. S. Müller, 1776)

Dinagat*

Siargao*

On Dinagat and Siargao the Philippine Cockatoo was quite a com-

mon bird and was usually seen in pairs or in small flocks of about five to eight members, either flying about the immediate vicinities of forest areas with clearings in them or perching on the top branches of tall trees growing at the edges of the clearings. The birds were frequently seen in the immediate vicinities of original dipterocarp forest areas or remnant patches of this forest type.

Some of the members of a flock occasionally gave out the loud harsh notes of the species as they flew about an area. Then from the tall trees some of the birds perching there would give out their loud harsh notes, soon after to be answered by similar loud harsh notes from another direction inside the forest nearby.

Some farmers told us that occasionally flocks of this cockatoo, numbering about one dozen or more, had made regular visits to certain cornfields in the clearings among the hills where the crops were maturing and that the birds ate and destroyed large numbers of the maturing ears. A particular flock usually made it a habit to visit regularly certain cornfields in the hills of certain localities until the crops were harvested. During certain years the destruction of these corn crops was particularly severe.

We came upon a clearing inside an area of original dipterocarp forest on the lower slopes of one of the mountains near Mt. Kambinlio, in the interior of Dinagat. Here a few tall, dead trees were still left standing and the surrounding areas in the clearing were planted to corn. On the trunk of one dead dipterocarp tree, about 20 meters from the ground, a cockatoo was entering a hole and another was perching on the branch of a nearby tree watching. Apparently, the site we came upon was a regular nesting area of these cockatoos where they had bred before.

The Philippine Cockatoo was frequently kept as a cage bird on both islands. Locally the bird was known as "Katala" or "Abukay," both names being the common Cebuano names for this species.

Loriculus philippensis apicalis Souance, 1856

Siargao*

The Philippine Hanging Parakeet was more often heard than actually seen on both Dinagat and Siargao. The species was not really rare on both islands because its musical notes were heard frequently enough in the coconut groves in the lowlands among human habitations, even along the seacoasts, and also in the coconut groves on the hills and mountains in the interior. Nevertheless, locating the bird among the coconut fronds and inflorescences was difficult.

Some farmers on both islands reported to us that this bird was occasionally taken among the leaf bases of the coconut palms after it had become helpless as a result of intoxication from drinking "Tuba," the

fermented sap of the coconut collected by the people in bamboo tubes attached to trimmed coconut inflorescences. The helpless bird would be hanging to the lip of the bamboo collector tube and would easily be collected by the "Tuba" gatherer and kept as a cage bird in his nipa hut.

On Dinagat the Philippine Hanging Parakeet was seen frequently enough but always from quite some distance while in flight in the lowlands, often in the immediate vicinities of the dipterocarp forest patches, in secondary forests, and in parang vegetation. The very characteristic notes of this species were also heard quite often in the scrub forests at the higher elevations of the hills and mountains in the interior, even on the ridges and summits of some of the peaks in the Mt. Kambinlio and Mt. Redondo localities.

On Siargao this bird was also more often seen in flight, and its notes were often heard in the coconut groves from the seacoasts into the interior and in second-growth vegetation that covered most of the hills in the interior.

Even from a distance the observer could easily identify the Philippine Hanging Parakeet through its characteristic undulating flight, usually accompanied by its loud whistling notes.

In the rural areas of Dinagat and Siargao, this species was a common cage bird, and in some farmers' homes as many as two or three birds were seen inside their cages. Once in a while the farmer owning a bird would hang it outside as a bait for attracting other hanging parakeets, which would be caught in a prepared snare nearby.

The Philippine Hanging Parakeet was known locally as "Kusi," the vernacular name by which the Cebu Visayans know this species.

FAMILY CUCULIDAE CUCKOOS

Cuculus micropterus micropterus Gould, 1837

Dinagat*

The Short-winged Cuckoo was rare on Dinagat and was never encountered on Siargao. Two specimens of this rare straggler in the Philippines were both taken on Dinagat and were secured inside dense remnant patches of dipterocarp forest in the foothills close to the edge of cultivated fields planted to rice. In both instances the trees were of moderate height and had dense foliage. Both birds were discovered accidentally among the branches in well shaded portions.

Up to the present only a few specimens of this straggler have been taken on very few islands in the Philippines.

Cacomantis merulinus merulinus (Scopoli, 1786)

Dinagat*

Siargao*

The Plaintive Cuckoo was uncommon on both Dinagat and Siargao and was heard more often than seen. Occasionally its very distinctive and mournful notes were heard coming from the tops of sparse trees growing at the edges of cultivated fields and meadows in the lowlands and foothills.

The notes of this cuckoo were heard occasionally from the top of one of the tall trees inside the clearings in dipterocarp forest patches that covered the lower elevations of hills immediately adjacent to cultivated fields in the lowlands along the western coasts of Dinagat. On Siargao this bird was occasionally heard calling from the top of some trees at the edges of secondary forests, which covered the hills in the interior.

One could easily enough trace the cuckoo through its mournful notes, and he could even pinpoint exactly the very tree from which the bird called, but locating the bird among the dense foliage was often difficult.

The characteristic notes of the Plaintive Cuckoo resemble the syllables "Peet-to-peet . . . Peet-to-peet . . . ," etc., repeated four or more times in a gradually ascending pitch. The bird then keeps silent for a few minutes before resuming its mournful notes.

The Plaintive Cuckoo usually went about its daily activities singly.

Cacomantis variolosus sepulcralis (S. Müller, 1843)

Siargao*

The Brush Cuckoo was rarer than the Plaintive Cuckoo on both Dinagat and Siargao. To one who is familiar with the notes of both species, it is easy enough to differentiate the calls of both species and to identify the owners of the calls at any time. Like the Plaintive Cuckoo, however, locating the Brush Cuckoo among the branches and dense foliage of the perching trees is a difficult task.

On Dinagat the Brush Cuckoo was heard three times calling from the tops of some tall trees growing inside the patches of original dipterocarp forests that covered the lower elevations of some of the mountain peaks near Mt. Kambinlio. Each time the bird could not be located from among the branches and dense foliage of the perching trees.

On Siargao the characteristic notes of the species were heard twice, and in each instance the notes came from the top of a tall tree that grew among other trees in a dense second-growth forest patch, one of

many such patches growing on the hills in the interior of Osmeña, Dapa, not far from the cultivated fields of the barrio.

***Eudynamys scolopacea mindanensis* (Linné, 1766)**

Dinagat*

Siargao*

The Koel was fairly common on Dinagat and Siargao. Its loud notes were frequently heard inside the dense patches of second-growth forests in the foothills and inside the remnant dipterocarp forest areas that covered the small valleys and narrow strips of flatlands in the lower elevations of hills and mountains in the interior, especially on Dinagat. Occasionally, pairs of this species were encountered in some of the trees in scrub forests on the hillsides and mountain slopes in the Kambinlio localities at about 300–400 meters above sea level.

The birds usually went about in pairs and frequently selected their perching sites in the upper parts of the crowns of first-story dipterocarp trees and in some trees of the second story.

The loud notes of the Koel sounded like the syllables “Ba-hao . . . Ba-hao . . . Ba-hao . . . ,” etc., repeated several times, and then silence. Later on, another set of these loud notes would be given again. This sequence usually continued for some time, until the birds left the area.

The species was heard from near the seacoast and deep in the interior. The birds gave their loud notes during daytime as well as night.

Because of its call, the inhabitants know this bird as “Ba-hao” or “Kua-hao.”

***Centropus viridis viridis* (Scopoli, 1786)**

Dinagat

Siargao*

The Philippine Coucal was a common bird on Dinagat and Siargao and was usually seen in open country among the dense growths of tall grass, especially Kogon (*Imperata* spp.) and Talahib (*Saccharum spontaneum* var. *indicum* Hack.). Other favorite habitat types were the dense bamboo thickets (*Bambusa* spp.), which were quite plentiful in the lowlands, even near human habitations, in the dense second-growth patches and parang vegetation, and close to the well cultivated areas in the lowlands and foothills.

From a distance one or a pair of this species were often observed in the middle of some grassland area containing tall grass with sparse growths of bushes and shrubs. When disturbed, one bird would flush from its swaying perch on the top of some tall grass; and with fast-beating wings alternated regularly with motionless gliding on out-

stretched wings, it would fly barely above the grass. After about 10–15 meters, it would dive into another dense patch of mixed growths of tall grass, bushes, and shrubs. If there were a pair of these coucals, the partner would immediately follow, and both birds would be seen diving into another patch.

Occasionally, one bird would be seen perching on top of a bush or shrub surrounded by grass in parang vegetation. When disturbed, the bird would immediately dive back into the tall grass and scramble and skulk among it.

On Dinagat and Siargao the Philippine Coucal was frequently met with either singly or in pairs, usually at the edges of cultivated fields adjacent to dense second-growth forest patches, which covered the low hills nearby. The species was never observed inside the patches of original dipterocarp forests that were still intact in the localities collected in, except along the edges of clearings that had been made inside these forest patches. On both Dinagat and Siargao the species was not encountered in the higher elevations of the hills and mountains, but most often it was observed at the bases of the hills and low mountains and on their slopes in the parang and grassland areas, up to elevations of about 300 meters above sea level.

The characteristic loud, mournful notes of the Philippine Coucal were heard frequently enough coming from the grassland and parang areas on the low hills on both islands. The notes closely resembled the syllables "Koo-koo-koo . . .," etc., repeated several times at the same pitch and volume, followed by regular intervals of silence. Occasionally these mournful notes were heard at night.

When the bird got excited, after being disturbed in its feeding or nesting site by a human, this coucal made other notes that were not really loud but that could still be heard about 5–10 meters away from the bird. These notes resembled the syllables "Cha-gook-chook," repeated from time to time with intervals of silence between. The bird kept on giving these notes, always in a low, harsh and croaking manner, while it scrambled and skulked among the branches of bushes and shrubs in the dense patch that it passed through on its way to another area of tall grass, into which it dove and disappeared. The same notes were given out by a bird as it scrambled and skulked through dense bamboo thickets nearby and emerged on the other side, going to another perch in the same area.

The inhabitants on both islands know the bird locally as "Ko-kok" and "Sa-guk-suk," both local names based on the notes that the bird makes. The Cebuanos and other East Visayans use the same local names for this coucal.

Centropus melanops Lesson, 1830

Dinagat*

Siargao*

On Dinagat and Siargao, as on nearby Mindanao, the Black-faced Coucal was never observed in the cultivated areas, grasslands, parang, or open country—the habitat types preferred by the Philippine Coucal. The Black-faced Coucal was encountered inside dense original and second-growth forests, especially in the dense thickets found inside these forests.

On Siargao this coucal was usually encountered inside the dense secondary forests that covered large areas of the hills in the interior, such as those in the hills of Osmeña, Dapa.

On Dinagat this coucal was frequently met with inside the dense patches of original dipterocarp forests that covered many of the small valleys and small areas of flatlands found among the hills and mountains near Mt. Kambinlio and Mt. Redondo. Occasionally, this coucal was observed singly or in pairs on the top branches of trees in scrub forests that covered the slopes of the mountains in the localities of Mt. Kambinlio and Mt. Redondo, up to elevations of about 400 meters.

This coucal preferred to stay among the top branches and dense foliage of the taller trees of secondary forests and the second-story trees inside dipterocarp forests.

The characteristic loud notes of this species were occasionally heard coming from the dense masses of foliage of the vines and lianas that climbed the trunks of first-story trees in the dipterocarp forest areas and patches near Mt. Kambinlio. These notes did not bear any similarity at all to the notes of the Philippine Coucal. After hearing these notes twice, one can identify the owner and trace the exact location of the bird among the dense branches and foliage of the forest tree where the bird is perching.

FAMILY STRIGIDAE OWLS

Otus bakkamoena everetti (Tweeddale, 1878)

Dinagat*

The single specimen of the Oriental Screech Owl collected on Dinagat was the only specimen of this rare species that was seen on this island during the entire period of 44 days that the collecting expedition spent in the field. The single specimen was taken in a bird net at the edge of a clearing in the foothills, close to remnant original dipterocarp forest patches and secondary forest areas. The bird was very badly torn when it was recovered from the net early in the morning, and we never learned what animal had attacked it while it was struggling to free itself from the net. The species was never met with on Siargao.

Mimizuku gurneyi (Tweeddale, 1879)

Dinagat*

Siargao*

The Giant Scops Owl was taken on both Dinagat and Siargao, but the species was uncommon on both islands, as on the nearby large island of Mindanao.

The Dinagat specimen was taken at night with the aid of a flashlight. At the time, it was perched in a tall tree at the edge of a clearing inside a logged dipterocarp forest area on a low hill. The locality was densely forested and not far from the coast.

We ascribed to this species the loud owl calls that we had occasionally heard at night coming from the small patches of remnant dipterocarp forest in the foothills. The patches were mixed with dense second-growth forests and were immediately adjacent to the cultivated fields in the lowlands of Barrio Kambinlio, Loreto. In previous collecting expeditions on Mindanao Island, we had also heard the same loud nocturnal owl calls in forests growing on low mountains in the interior, and in the few cases where the birds were successfully secured, always with the aid of head lanterns, they proved to be of this owl species.

On Siargao the same loud nocturnal calls were also heard occasionally coming from the dense patches of second-growth forests in the hills bordering the ricefields in Barrio Osmeña, Dapa. Here, too, the calls came from this species, as proved when it was successfully collected twice.

Ninox philippensis spilocephala Tweeddale, 1878

Siargao*

The Philippine Boobook Owl was uncommon on both Dinagat and Siargao.

During our night-hunting excursions among the newly harvested ricefields adjoining the foothills in Barrio Kambinlio, Loreto, on Dinagat, we occasionally came upon solitary birds of this species perching on some bare branches of isolated trees at the edges of the ricefields. Rarely, we came upon solitary birds of this species perching on the ends of some of the bamboo posts used as supports for the crude and temporary threshing platforms made of bamboo, which were placed in a corner of a field. The strong and well concentrated light of the head lamp, upon hitting the eyes of the bird, made them glisten brightly. In all instances, however, the birds did not linger long enough on their perches to allow the collectors to come within collecting distance. No specimen of this little owl was taken during the night hunting on Dinagat. Moreover, none of the collectors had the opportunity to come upon this bird by accident as it perched during the day.

On Siargao this owl behaved in the same manner as on Dinagat; so it was never collected during the night hunting. However, specimens were collected during the daytime when the collectors came upon the species by sheer accident while the birds were on their daytime perch, usually a branch in the deeply shaded parts inside trees with dense foliage. Such trees grew in dense second-growth forest patches in the foothills bordering a small valley containing many ricefields.

The notes of this small owl sounded like the syllables "Book-kow-kow-kow . . .," etc., with pauses between the first three or four notes and the last ones uttered closer to each other, becoming closer together at the last few notes.

Based on the notes that it produces, the inhabitants of the two islands call this little owl "Bu-kae." The same local name is widely used in many parts of Mindanao and the East Visayan islands.

FAMILY CAPRIMULGIDAE NIGHTJARS

Eurostopodus macrotis macrotis (Vigors, 1831)

Dinagat*

On several occasions on both Dinagat and Siargao, just as the sun disappeared below the horizon, leaving some glow in the western skies, we saw and heard several Philippine Eared Nightjars in flight over the cultivated fields and open country in the interior, where the lowlands immediately adjoined the densely forested hills. As many as five to six birds were seen at one time, all in flight quite far from one another. They performed aerial acrobatics that consisted mainly of horizontally soaring on motionless, outstretched wings, dipping sharply and abruptly, then climbing steeply just as abruptly to resume their horizontal soaring again. All the while, the birds kept uttering their very characteristic, rather loud and high-pitched whistling notes that sounded like "Chee-weeo," repeated several times with regular intervals of silence between notes. The birds usually stayed in the immediate vicinities of our campsites for about 15 minutes, but all the while they kept moving away, until they finally disappeared from view and their whistling notes were hardly audible. Then, total darkness covered our area, and the birds could no longer be heard.

Occasionally, the same phenomenon was observed in both camps on both islands during very early mornings. Just as the glow of the rising sun barely brightened the eastern horizon yet darkness still remained in the locality, one or two birds were heard and seen performing the same aerial routine they had done after sunset, except that they did these characteristic acts within much shorter periods. Again, the birds performed their acrobatic flight to the accompaniment of their loud whistling notes, "Chee-weeo," repeated several times and then

ceased entirely. By that time it was already morning, and the sun was evident above the eastern horizon.

Very rarely this bird was disturbed singly from its daytime roost among the dry leaves on the forest floor, but not one was secured. It was easier to collect the bird while it was in flight, especially while it soared over the open fields, but even then, this opportunity rarely happened within effective collecting distance.

FAMILY APODIDAE SWIFTS

Collocalia vanikorensis amelis Oberholser, 1906

Dinagat*

Large numbers of swiftlets were always observed in flight over the cultivated areas and open country in the lowlands along the western coasts of Dinagat and even over the sea along the seashores. Many swiftlets were always seen in the immediate vicinities of the high precipitous cliffs that bordered the sea in many places along the western coast and around the high rocky islets, of which there are quite a number off the coasts of Dinagat.

Two species of swiftlets of the same size, the smallest of the species of swifts in the Philippines, were very common in the immediate vicinities of our main camp at Kambinlio, Loreto. They were the main catch of the bird nets set in the ricefields and open meadows in the foothills. The Glossy Swiftlet, *Collocalia esculenta marginata*, was the most common form along the western coasts of Dinagat, ranging from the seacoast up to the higher elevations in the localities of Mt. Kambinlio and Mt. Redondo. The Pygmy Swiftlet, *C. troglodytes*, was also common, although not as numerous in one area as *C. esculenta marginata*. The Gray Swiftlet, *C. vanikorensis amelis*, was rather uncommon and was seldom seen in flight in the same localities where the two other swiftlets were observed in large numbers.

In flight it was easy enough to distinguish *C. troglodytes* and *C. esculenta marginata* from the Gray Swiftlet and from each other. *C. troglodytes* had the distinct and glistening white rump very clearly seen, even in flight. *C. esculenta marginata* showed only a whitish rump but not as glistening and distinctly white as that of *C. troglodytes*. *C. vanikorensis amelis* was easily much larger and did not show any white or whitish rump when in flight; in addition, it was not so common as the other two forms.

The inhabitants of Siargao told us about many small swiftlets nesting inside caves in the interior hills. There were quite a number of swiftlets, of which the two smallest forms, *C. troglodytes* and *C. esculenta marginata*, were easily identified while in flight over the ricefields

and other cultivated areas near our main campsite in Barrio Osmeña. Strangely enough, our bird nets never caught any of these swiftlets.

The inhabitants gave all swifts, swiftlets, and swallows the name "Sayaw," the common vernacular name that the East Visayans call these birds. Some also knew the swiftlets as "Buta-buta."

Collocalia troglodytes G. R. Gray, 1845

Dinagat*

On Dinagat and Siargao large numbers of both the Pygmy Swiftlet and the Glossy Swiftlet were usually observed in flight over the rice-fields and other cultivated areas, grasslands, and open country, from the lowlands into the hills, especially on Dinagat. Both forms were usually observed flying in large numbers inside the clearings in the forests in the hills and mountains near Mt. Kambinlio and Mt. Redondo.

Large numbers of both the Pygmy Swiftlet and the Glossy Swiftlet seemed to prefer the immediate vicinities of steep and precipitous cliffs from the seacoasts well into the mountainous interior on Dinagat Island. These localities were most likely ideal breeding places of these two swiftlets, considering that there were numerous caves, cavities, and overhangs among these cliffs.

Collocalia esculenta marginata Salvadori, 1882

Dinagat*

The Glossy Swiftlet, together with the Pygmy Swiftlet, was frequently observed in flight in large numbers from the seacoasts (including the seas close to the shores of western Dinagat), as well as over the lowlands and deep into the interior among the mountains near Mt. Kambinlio and Mt. Redondo.

This species was easily the most numerous and most common swiftlet on both Dinagat and Siargao. On the other islands of the Philippines, this swiftlet had been found nesting inside caves, in shallow caverns, and even under overhangs among the rock in cliffs, including those on tiny precipitous and steep rock islets off the coasts of the larger islands.

FAMILY TROGONIDAE TROGONS

Harpactes ardens ardens (Temminck, 1826)

Dinagat

On Dinagat the Philippine Trogon was quite a common bird inside the darker parts of the original dipterocarp forest areas and remnant patches, which were growing in the small valleys and narrow strips of flatlands among the hills as well as on the lower slopes of the hills and mountains near Mt. Kambinlio and Mt. Redondo.

The species usually went about either singly or in pairs and most often made no noise at all. Most of the time the male was discovered before the female, especially when it took flight from its low perch on one of the lower branches of a third-story tree, frequently one in the more deeply shaded areas of the forest. If not disturbed, the bird usually stayed on its perch and remained motionless for quite sometime. From its perch, the bird sallied forth after some insect nearby; then if it did not see any intrusion, it usually went back to its perch.

Oddly enough, in spite of the very bright colors of the male, the observer was most likely to miss it among the foliage and branches of the low tree where it perched. The female partner, too, was often missed, even if the male had already been seen on a tree and the female was perching nearby, perhaps on another branch in the same tree or in a nearby tree.

FAMILY ALCEDINIDAE KINGFISHERS

Ceyx argentatus argentatus Tweeddale, 1877

Siargao*

In the interior of both Dinagat and Siargao, the Silvery Kingfisher was observed often enough along the streams inside the patches and areas of remnant dipterocarp forests and mixed dipterocarp and secondary forests. Unfortunately, not even a single specimen of this species was taken on Dinagat, yet it was not really rare on this island.

This small kingfisher usually went about singly and often perched on low branches of bushes growing along the streams. Occasionally, the bird perched on a rock in the middle of the shallow stream or along the side. In most cases the perching bird was difficult to discover because it remained motionless for long periods and appeared as part of its background. Most of the time, a collector discovered this little kingfisher only when it had already flown from its perch and moved farther along the stream. The bird usually uttered a soft, high-pitched "Cheet" as it left its perch.

On Siargao, three specimens of the bird were taken—all from along the streams inside dense forest growths, especially in the patches of mixed dipterocarp remnants and secondary forests.

Pelargopsis capensis smithi (Mearns, 1909)

Dinagat

The Stork-billed Kingfisher was occasionally observed, singly or in pairs, as it perched on low bare branches or on the prop roots of mangrove trees growing along the seashores in Loreto, on the western coast of Dinagat, and in Omasdang, on the eastern coast or Pacific side of this island. A pair of this species of kingfisher was often observed

perching in different parts of the river in Barrio Kambinlio, sometimes in the vicinity of the main camp but more frequently in the portion of the river close to its opening to the sea.

This large kingfisher was never seen on Siargao in the localities in the interior where collections were carried on.

The inhabitants on Dinagat called the Stork-billed Kingfisher "Ba-ka-ka."

Halcyon chloris collaris (Scopoli, 1786)

Dinagat
Siargao*

On both Dinagat and Siargao the White-collared Kingfisher was one of the most common birds, and the most common kingfisher. During low tides, this kingfisher, singly or in pairs, was often observed actively feeding on the exposed mud flats in Loreto, Dinagat, on the western coast. Very often, as many as a dozen or more of these birds were seen perching on the rocks in exposed mud flats during the low tides, and from time to time the birds picked up food items from the ground around their perches. After a bird had taken what it was after on the ground, it usually flew and perched on a rock nearby, not necessarily the same rock it had been on previously. When the tide came back and gradually covered the mud flat, the birds immediately left the area and flew toward a nearby islet or toward the coast to continue its feeding activities in these new places.

This kingfisher ranged all over the lowlands on both islands. It stayed along the seacoasts and ranged among the cultivated fields in the interior. It stayed in open country, parang, grasslands, and marshlands in localities in the lowlands and moderate elevations where there were no more forested areas, whether or not there were rivers and streams nearby. The bird stayed close to human habitations and often perched on the roofs of the nipa-and-bamboo huts in the lowlands. It was never observed inside the real forests or at high elevations in the mountain localities of Mt. Kambinlio and Mt. Redondo on Dinagat.

On Siargao this kingfisher was observed along the seashores in Dapa, very close to the wharf. It was also found in the cultivated fields, marshy areas, and coconut groves in the interior localities of the island, such as in the immediate vicinity of our main camp in Barrio Osmeña, Dapa.

Its loud and piercing notes were familiar sounds that could be heard in many localities, from the exposed tide flats along the seashores into the interior, especially in the cultivated areas and open country along the foothills, including the ricefields and the adjacent hills on both Dinagat and Siargao.

The White-collared Kingfisher is the most common species of several species of kingfishers in the Philippines. On the other islands of the Philippines, especially the larger ones, this kingfisher usually stays in well cultivated areas and farms, open meadows, grasslands, parang, marshlands, or almost anywhere in the lowlands that has been cleared of forests. The species does not stay inside the forests, except perhaps inside mangrove forests, although it may be found along the edges of forests when they are adjacent to well cultivated fields and open country. This kingfisher loves to stay inside coconut groves and makes its nest inside the nest of tree termites, which is usually attached to the trunk of a coconut palm tree or other trees.

The inhabitants of Dinagat and Siargao call this kingfisher "Ti-ka-rol," the local name by which this species is known all over the Eastern Visayas, especially on Cebu, Bohol, and Negros Oriental.

Halcyon smyrnensis gularis (Kuhl, 1820)

Dinagat*

Siargao*

The White-throated Kingfisher was a very common bird on both Dinagat and Siargao and was usually encountered in almost all the habitat types where *Halcyon chloris collaris*, the most common kingfisher, was found. *H. smyrnensis gularis* was the second most common kingfisher species on both islands. The same was true on the other islands in the Philippines where collecting has been carried out during the last 35 years or so.

H. smyrnensis gularis, however, was found on Dinagat and Siargao in localities farther from any body of water, be it stream, river, pond, or sea, than the average habitat of *H. chloris collaris*. The White-throated Kingfisher was the species of kingfisher that was encountered more frequently in the kaingin clearings in the interior. These clearings were made inside original forest areas, especially in dipterocarp and scrub forests located in the hills and at the lower elevations of mountains in the interior.

H. chloris collaris, however, was more common along the coastal areas, including inside the mangrove forests and nipa swamps and on the exposed mud flats during low tides. *H. smyrnensis gularis* was seldom seen along the seashores on both islands. The same is true on the other islands of the Philippines.

Both species of kingfishers were observed perching on the branches of trees growing along the banks of streams and rivers in the lowlands and foothills on both Dinagat and Siargao. Although both species of kingfishers feed on insects and other small invertebrates and on lizards and other small terrestrial vertebrates, which they secure from the

ground, *H. chloris collaris* has more opportunity to feed on marine aquatic animals, including fishes, crustaceans, annelids, and mollusks, which are found in the sea and on the exposed tide flats during low tides. Conversely, *H. smyrnensis gularis* has more opportunity to feed on small terrestrial animals, both invertebrates and vertebrates.

The inhabitants on both islands called the White-throated Kingfisher "Ba-ka-ka," the same vernacular name they applied to the larger kingfisher, *Pelargopsis capensis smithi*. The Cebuano segment of the population called the White-throated Kingfisher "U-wak-ba-ta," the vernacular name by which this species is known in Cebu.

FAMILY MEROPIDAE BEE-EATERS

Merops viridis americanus P. L. S. Müller, 1776

Dinagat*

The Chestnut-headed Bee-eater was seen occasionally in flight over the ricefields and nearby marshy areas in the lowlands close to our main camps on both Dinagat and Siargao. The birds usually went about their search for food in flocks of six to a dozen members. Inside clearings in the hills, near the cultivated areas in the lowlands of Barrio Kambinlio, small flocks of this bee-eater, composed of five to six members, were twice observed perching on the tops and branches of shrubs that had started to develop inside these clearings. From time to time, one or two birds left their perches and flew low over the clearing, swooping down on some insects among the bushes and grass in the clearing, then perching nearby.

The notes of this species closely resembled the sound of "Purok-purok," repeated from time to time as the birds soared low over the vegetation and pounced on insects.

On the larger islands of the Philippines, flocks of this species and those of a closely related species, *Merops philippinus philippinus*, or Blue-tailed Bee-eater, were observed to feed together in the same field or open meadow.

The inhabitants on the two islands called the Chestnut-headed Bee-eater "Purok-purok," after its characteristic notes.

Both species of bee-eaters in the Philippines have similar habits.

FAMILY CORACIIDAE ROLLERS

Eurystomus orientalis cyanocollis Vieillot, 1819

Dinagat

Siargao*

On both Dinagat and Siargao the Dollar Bird was common and was often observed perching on some bare branch of tall and medium-

high trees growing along the edges of the cultivated fields, open meadows, parang, and grasslands in the lowlands. This species was also frequently seen perching on some of the trees growing inside clearings in forest areas, especially in dipterocarp forests in the hills and on the lower slopes of the mountains on Dinagat in the Mt. Kambinlio and Mt. Redondo localities.

From its tall perch a bird usually swooped down on insect prey, which were on the leaves of the plants or flying over them. It then returned to its perch after capturing the insect prey. Most often it stayed on this perch for long periods until disturbed by something or until it saw possible prey somewhere else, whereupon it left the perch for another one nearby or some distance away.

On several different visits to a particular clearing, one was most likely to see the same bird or pair of birds. Nesting birds were observed coming out of holes at the ends of rotting, broken branches near the tops of tall dead trees left standing in clearings.

The inhabitants on both islands called this species "Ba-li-sak-sak."

FAMILY BUCEROTIDAE HORNIBILLS

Penelopides panini affinis Tweeddale, 1877

Dinagat

Siargao*

The Tarictic Hornbill was very common on both Dinagat and Siargao. This small hornbill went about its daily activities usually in pairs, but occasionally as many as six to a dozen of this species were seen feeding at the same time on the fruits (especially figs, *Ficus* spp.) of certain trees.

On Dinagat this hornbill was often encountered inside the remnant original dipterocarp forests growing in the small valleys and narrow strips of flatlands among the hills immediately adjacent to ricefields and other cultivated areas in Barrio Kambinlio. Some birds were also met with inside the dense second-growth forest patches in the foothills and on the slopes, as well as inside the scrub forests on the lower slopes, of hills and mountains in the Mt. Kambinlio and Mt. Redondo localities. The species was also seen often in the forests in the hills of Omasdang, on the Pacific side of Dinagat.

On Siargao this species was frequently seen inside the dense second-growth forests and mixed dipterocarp remnant forest and second growth, which were growing on the hills immediately around the ricefields and other cultivated areas in the interior, such as in Barrio Osmeña, Dapa, and in other localities where collections were carried on.

The inhabitants on both Dinagat and Siargao called this hornbill "Tao-si" or "Talo-si."

Aceros leucocephalus leucocephalus (Vieillot, 1816)

Dinagat*

The Writhed-billed Hornbill was occasionally observed singly or in pairs among the higher branches of the first-story trees in original dipterocarp forest patches that grew in the small valleys and flatlands among the hills, on the hillsides, and on the lower slopes of some of the mountains in the Mt. Kambinlio and Mt. Redondo localities. Rarely, one or a pair of these hornbills was seen in some of the taller trees in the scrub forests that covered the hilltops and ridges of the hills and low mountains and on the slopes of the higher peaks at elevations of about 500–600 meters above sea level.

Occasionally, as many as five or six of this hornbill species were observed feeding on tall fruiting trees inside dense dipterocarp forest areas, but when disturbed, the birds flew in different directions. The birds were not really members of a regular flock, because these hornbills were never observed to form flocks, but they merely congregated in one fruiting tree as long as the fruits lasted.

Because of its silent habits, the Writhed-billed Hornbill, although a large bird, was likely to be missed among the branches and foliage of the trees where it perched and fed. The birds seldom made any unnecessary noise in the course of feeding, even when several of them happened to be feeding in the same fruiting tree. If it did, in fact, make sounds, the notes uttered were not easily heard because they were merely soft sounds that resembled the syllables "Ung-ngeek . . . ngeek . . .," etc., repeated several times but not really loud enough to attract the attention of the average observer.

In the interior of Siargao the bird was not seen in any of the localities that were collected in quite thoroughly. The dense areas and patches of mixed remnant dipterocarp forests and secondary forests that covered large parts of the hills were ideal habitats for this hornbill species, but the species was never encountered in them. However, the larger species of hornbill, *Buceros hydrocorax mindanensis*, the Mindanao form of the Rufous Hornbill, was observed frequently enough among the tall trees inside these mixed forests.

The inhabitants reported having seen the Writhed-billed Hornbill in some forests in other parts of Siargao. More thorough collecting in more localities on Siargao Island will doubtless prove the presence of the species on this island.

Buceros hydrocorax mindanensis Tweeddale, 1877

Dinagat*

Siargao*

The Rufous Hornbill was common on Dinagat and Siargao. It was frequently seen and heard inside the areas of original dipterocarp for-

ests and mixed remnant dipterocarp and secondary forests among the hills and mountains in the interior of both islands.

This largest species of the Philippine hornbills was well known by the rural inhabitants on both islands, especially by the farmers who had made clearings inside the forests in the interior. They frequently encountered this hornbill in the forests and, occasionally, even inside their forest clearings. They were also familiar with the bird's very loud, characteristic calls, which they often heard early in the morning, at noon, and late in the afternoon.

In many parts of the Philippines where this species occurs, it is considered the "clock-bird"; hence, the species is known as "Reloj-del-monte" (clock of the mountain). When the birds call early in the morning, the farmers consider it time to eat their breakfast, after which they start on their farm chores. When they hear the calls at noon, they decide that it is time to eat lunch; and in the late afternoon, when they hear the usual loud calls, they stop working, go home, and start preparing the evening meal.

The loud calls of this large hornbill could easily be heard 1 or more kilometers from the perching tree, especially if the calls came from a tree located on top of a ridge or peak. Frequently, when one hornbill called, several hornbills answered, and their calls came from different parts of the forests in the locality. Occasionally, several birds were heard calling from one tree. This usually happened in the early mornings and in late afternoons. Five or more birds of this species sometimes congregated in the same tall fruiting tree in a particular locality and took turns calling. Soon other birds were observed coming to the tree. This phenomenon usually took place late in the afternoon and the birds continued calling until darkness set in. Early the following morning, the birds commenced calling again, one after another. This period of calling usually lasted about 10-15 minutes, then ceased altogether. Later on, the birds left the roosting tree, singly or in pairs, and flew to different parts of the forests in the locality.

Occasionally, during the day, several birds were heard calling from a particular tall tree, usually a fruiting tree where the birds fed. Other hornbills answered the calls from different parts of the forests nearby, some quite far away. Soon other Rufous Hornbills came to the tree where the calls had originated. The calls must have been a means whereby the calling birds told other birds of the fruiting tree where they could feed.

Some of the collectors in the expedition party were expert at imitating the characteristic call of the Rufous Hornbill. When they did so from under some tall forest tree, inside the forest, the birds came and perched on the tall trees nearby or on the very tree where the

collectors stayed at the time. It was a sort of an unethical way of collecting these hornbills.

The inhabitants on both islands, as on the other islands where the species occurs, call this hornbill "Kaa," based on its loud call which resembles the syllable "Kaa" repeated several times with intervals.

FAMILY PICIDAE WOODPECKERS

Dryocopus javensis multihunatus (McGregor, 1907)

Dinagat*

The White-bellied Black Woodpecker was seen many times on Dinagat, especially inside the original dipterocarp forests and in the clearings inside these densely forested areas. It was often seen on the trunks and branches of some trees growing at the edges of forests of mixed remnant dipterocarp and second growth among the hills and mountains in the interior mountainous regions of the Mt. Kambinlio and Mt. Redondo. Rarely, this species was observed on the trunks and branches of some trees in the scrub forests of Dinagat, as high as 600-700 meters above sea level.

The species was not really rare on Dinagat, but its habits of staying and feeding unobtrusively and silently on the trunks of trees among dense forest growths made it difficult to discover easily, even by one who happened to be nearby. It was only when the woodpecker made the characteristic loud and fast tapping sounds on the hollow, dead trunks that this woodpecker could be discovered. The usual tapping sounds produced by this woodpecker on the live trunks and branches were often dull and barely audible; so the bird could be in a site for some time without being discovered by someone nearby.

This woodpecker was not seen or encountered on Siargao, even inside the dense patches and areas of mixed remnant dipterocarp and secondary forests. It is very possible, however, that more thorough collecting may result in its discovery on Siargao.

The White-bellied Black Woodpecker was called "Ba-tok" by the inhabitants of Dinagat.

Dendrocopos maculatus fulvifasciatus (Hargitt, 1881)

Dinagat*

The Pygmy Woodpecker was observed several times tapping vigorously on the trunks and branches of dead trees left standing in clearings inside patches of original dipterocarp and secondary forests. These patches are found among the hills and mountains in the interior of Barrio Kambinlio, Loreto, near Mt. Kambinlio and Mt. Redondo, on Dinagat. Occasionally, this small woodpecker was also observed tap-

ping among the branches of low and medium-high trees at the outskirts of mixed remnant dipterocarp and secondary forest patches that adjoined the cultivated areas in the lowlands, open country, and meadows.

The bird usually went about its daily feeding activities singly or in pairs. One or a pair might be hard at work tapping on the dead branches of a tree standing very close to an observer, without the latter ever discovering the bird or the pair until they flew to another tree nearby. At such times these birds often gave out their very characteristic notes. Once the bird or pair reached the next tree, it was very easy for them to get lost among the branches. To find them, the observer would have to look very carefully because they would be difficult to locate among the many branches.

This small woodpecker was not collected on Siargao, and it was not observed at all in the localities collected in, even in the most likely habitats of this species—among dead trees inside clearings in both secondary and original dipterocarp forest patches, as well as in the outskirts of these forests where they adjoined cultivated areas and open country. Large areas of the hills in the interior of the island were covered with these two types of vegetation, but unfortunately none of the collectors had the opportunity to meet with the species in them.

The inhabitants of Dinagat and Siargao called this small woodpecker "Ba-tok," like the larger form of woodpecker.

FAMILY EURYLAIMIDAE BROADBILLS

Eurylaimus steerii mayri Salomonsen, 1953

Dinagat
Siargao*

The Wattled Broadbill was fairly common on Dinagat and Siargao and was usually met with inside the dense patches and areas of remnant original dipterocarp forests and in mixed dipterocarp and secondary forests. On Dinagat, a bird or a pair, or even a small flock of five to six members, usually perched on the lower branches and undergrowths of the third story, which consisted mainly of low trees, shrubs, and bushes growing inside the typically three-storied dipterocarp forests. On Siargao, the species was observed usually staying inside the dense patches of mixed remnant original dipterocarp and secondary forests, which formed quite large patches on the hillsides in the interior. Occasionally, one or a pair was met with inside the scrub forests on both islands.

Five or six members of a feeding flock would be feeding among the branches of the lower growths inside a forest patch, but their quiet and unobtrusive habits made it difficult for an observer to discover them easily. The birds would usually perch motionless on the lower branches

of low trees, shrubs, or even bushes inside the dark sites of a forest patch. They would remain in this motionless state for some time while waiting for insect activities nearby. From time to time, some of the birds would leave the perch and chase after the insects that would be discovered among the branches and leaves of the perching tree or of one nearby. The birds would then go back to their original perch or to one close by. The birds in a flock would follow the same routine, but not all of them would go after insect food at the same time.

Once the observer or collector discovered the birds, it would be easy to collect them in a particular spot in the forest because, in spite of the noise produced by the first shot, the other birds would continue to perch in the same places they were in before being discovered. The other members of the flock would remain nearby and act stupidly. It would take some time before the group finally left the spot.

FAMILY PITTIDAE PITTAS

Pitta sordida sordida (P. L. S. Müller, 1776)

Siargao*

The Black-headed Pitta was rare on both Dinagat and Siargao. The bird was seen in two instances, and its very characteristic notes were heard once coming from a dense patch of mixed remnant original dipterocarp and secondary forests inside a small valley among the hills in the interior of Dinagat. It was never collected on Dinagat, and only one specimen was successfully taken on Siargao. The bird was heard several times calling from the dense and dark parts of the secondary forest patches that covered many hills in the interior of Siargao, but it was very difficult to locate the bird among the dense growths.

The bird usually went about its feeding activities singly or, very rarely, in pairs. Locating it on the ground in the midst of the thick undergrowths and in the semidark places was a difficult job; usually, the bird would never be discovered. Strangely enough, the very bright and striking colors of its plumage did not help at all in trying to locate it.

Unlike many birds that stay often on the forest floor, this bird does not walk on the ground. It hops actively, covering long distances in the process—much better than if it walked or ran. It is very easy for it to disappear in the semidarkness of the forest undergrowth.

The Black-headed Pitta has very characteristic notes that sound like "Wow-ha . . . Wow-ha . . .," etc., repeated several times with good intervals between, followed by long silence. It would be quite a long time before the bird called again from the same site.

FAMILY CAMPEPHAGIDAE CUCKOO-SHRIKES

Lalage nigra chilensis (Meyen, 1834)

Siargao*

The Pied Triller was very common on Dinagat and Siargao. It was usually observed feeding on the insects found among the foliage of trees and shrubs in the farms and other cultivated areas, in meadows and open country, in second growth and parang vegetation, in coconut groves, and even in the gardens near the houses in the barrios and other well settled areas. This species was also met with in mangrove and beach forests close to the coasts.

The bird usually went about its feeding activities singly or in pairs, but occasionally as many as a dozen birds were observed feeding in the same tree or shrub. When disturbed, the birds would leave the feeding plant singly or in pairs and proceed in different directions.

During certain seasons of the year large numbers of caterpillars attack some plants, including such species as "Arbol de fuego" (*Delonix regia* [Boj.]). Large numbers of this species are planted along the streets in cities and towns because it has very bright and colorful flowers. The caterpillars feed on the leaves in great numbers, and during these times as many as a dozen individuals of the Pied Triller would congregate on the affected tree to feed on the caterpillars. It was not exceptional to see several birds of this species feeding together in the same tree along the streets of Manila, Cebu, Iloilo, and in the other busy cities of the Philippines.

The bird's mellow notes were often heard coming from the branches of trees and shrubs growing at the edges of ricefields and other cultivated fields in the lowlands of Barrio Kambinlio, Loreto, on Dinagat Island and in Barrio Osmeña, Dapa, on Siargao.

The rural inhabitants of both islands called this bird "Bu-ga-ongon," the same name that the inhabitants of Mindanao, Cebu, Leyte, and Negros Oriental applied to this bird in their native regions.

FAMILY ORIOLIDAE ORIOLES

Oriolus chinensis chinensis Linné, 1766

Dinagat

Siargao*

On Dinagat and Siargao the Black-naped Oriole was easily one of the most common birds observed in the well cultivated areas close to the barrios. The bird was frequently seen, singly or in pairs, in coconut groves, either feeding actively on the flowers of the coconut palms or just perching on the fronds. The species was also met with often among the trees in secondary forest patches, in parang vegetation, and

in the trees and shrubs growing as hedges along the edges of farms and cultivated fields. This oriole was also seen frequently among the trees at the edges of patches and remnant areas of original dipterocarp forests that were found in the foothills, immediately adjoining the ricefields and other well cultivated farms in the lowlands, especially along the western coasts of Dinagat.

On Siargao the Black-naped Oriole was often observed singly or in pairs feeding very actively among the branches of fruiting trees in secondary forest patches, which covered the hills in the interior of the island and immediately bordered the ricefields and other well cultivated fields.

The very characteristic loud and musical call of the species was often heard among the vegetation where the bird happened to be feeding at the time. The pleasingly musical notes resembled the syllables "Tu-li-hao," repeated from time to time with intervals of silence between.

The bird was frequently kept in cages, and usually male and female birds were placed together and fed bananas and other fruits, such as papayas. However, they do not live very long as pets or cage-birds.

The rural inhabitants of Dinagat and Siargao called this oriole "Tu-li-hao" or "An-tu-li-hao," based on its very well known notes. The same names for this species are used locally by the inhabitants of the Eastern Visayan islands and Mindanao.

FAMILY CORVIDAE CROWS

Corvus macrorhynchos philippinus (Bonaparte, 1853)

Dinagat*

Siargao*

The Large-billed Crow was another very common bird on Dinagat and Siargao. It was frequently observed in pairs and occasionally in small groups of six to eight, staying in coconut groves and secondary forests, along the edges of remnant original dipterocarp forest patches adjoining farms and cultivated fields, inside groves of mixed trees, shrubs, and bushes in parang vegetation, and in open country and grasslands where there were trees and shrubs growing, even if sparsely. Occasionally, as many as a dozen or more crows were observed feeding on the exposed tide flats along the western coasts of Dinagat. They were seen actively chasing crabs and other animals living among the rocks in the tide flats.

The crow was not liked at all by the rural inhabitants of Dinagat and Siargao, chiefly because of its habits of preying on the chicks of domestic poultry and of robbing eggs from chicken nests, even if these nests were placed under the nipa huts of the farmers. Farmers in dif-

ferent parts of the Philippines have the same attitude toward the crow; as a result, the species is very much persecuted all over. In spite of these unfavorable factors against the species, the crow is still one of the most common and widely spread species in the Philippines; and, strangely enough, the bird still stays close to human habitations.

The inhabitants of Dinagat and Siargao, and in all parts of the Philippines, called this species "U-wak," based on its very characteristic notes. The loud and harsh notes of this crow sound similar to the syllables "U-wak . . . U-wak . . . U-wak . . .," etc., repeated several times with regular intervals between notes, hence the local name.

FAMILY RHABDORNITHIDAE CREEPERS

Rhabdornis mysticalis minor Ogilvie-Grant, 1896

Dinagat*

The Striped-headed Creeper was uncommon on Dinagat and was not met with at all on Siargao.

The bird went about the daily feeding activities usually singly or in pairs, creeping on the trunks and branches of trees of moderate heights inside patches of remnant original dipterocarp forests and in dense patches of secondary forests. Occasionally, this creeper was observed feeding in the trees inside patches of mixed secondary forest and remnant original dipterocarp forest, which were found in the foothills and deep in the interior of the Mt. Kambinlio localities, among the hills and mountains. Rarely, the species was encountered in scrub forests in the higher elevations, but not more than 500 meters above sea level.

Occasionally, a pair was seen feeding on something at the ends of the small branches, the birds alighting on the small twigs nearest the leaves containing the food items the birds were interested in. In this manner of feeding there was no creeping action at all; the birds behaved like ordinary perching bird species. The tendency of the species, however, is to creep on the branches and trunks of trees where it may happen to feed. It is possible that when the bird feeds like other ordinary birds on the flowers and fruits at the ends of twigs, it does not need to creep; but when it is after insect food, it creeps and examines the branches and trunks for possible tidbits.

FAMILY TIMALIIDAE BABLERS

Stachyris capitalis capitalis (Tweeddale, 1877)

Dinagat

The Black-crowned Tree-babbler was fairly common among the lower branches of second-story and third-story trees, which formed the

lower growths inside patches of remnant original forests and also inside the logged forest areas on Dinagat. The species was not observed at all on Siargao, even inside the large patches of secondary forests and mixed secondary forest and dipterocarp forests in the hills in the interior of the island.

The bird usually went about in pairs, although occasionally small feeding flocks of about six to eight members were seen among the branches and foliage of the lower growths in original dipterocarp forest patches. The bird was very difficult to discover among the dense foliage of a tree, even if a flock were feeding in it.

The Black-crowned Tree-babbler was not really rare in the forests on Dinagat, but its silent ways of feeding and going about its search for food made it easy to miss.

Macronous striaticeps

Although this species has been recorded from Bohol, Leyte, Mindanao, and Samar and has been attributed to *mindanensis* Steere, 1890, the population from Dinagat and Siargao, heretofore unrecorded, is distinctly different and may be called:

Macronous striaticeps alcasidi new subspecies

Type DMNH 20366, ♂ Omasdang, Loreto, Surigao del Norte, Dinagat Id., P. I., March 30, 1972. Wing 68; tail 61; bill 16; tarsus 23.

DIAGNOSIS: Differs from *mindanensis* by having the brown of the upperparts greener, borders of white shaft streaks of back plumes less blackish, less contrasting; underparts in series less heavily streaked, resulting in a whiter appearance, with some individuals coming close to *mindanensis*; sides, flanks, and under tail-coverts colder and less rufescent; flank plumes longer and better developed than *mindanensis* or *kettlewelli*. Also, wing in series averages longer.

Differs from *kettlewelli* in having ground color of crown black, not dark brown; heavier white streaking on crown; dorsal plumes more slender, white shaft streaks narrower, less broadly outlined in blackish; upper tail-coverts and edges of rectrices darker, less reddish brown; underparts paler.

RANGE: Dinagat and Siargao.

SPECIMENS EXAMINED: *kettlewelli*—Tawitawi, Sulu Archipelago 5 ♂, 1 ♀. *mindanensis*—Leyte 2 ♂, 3 ♀; Mindanao 4 ♂, 4 ♀; Samar 7 ♂, 3 ♀. *alcasidi*—Dinagat 13 ♂, 8 ♀; Siargao 19 ♂, 12 ♀.

ETYMOLOGY: This new subspecies is named for Dr. Godofredo L. Alcasid, Director of the Philippine National Museum, for his continued interest in and contributions to ornithology in southeast Asia.

REMARKS: On Dinagat and Siargao the Brown Tit-babbler was a very common bird in both the original and secondary forests and in the patches containing mixed growths of original and second-growth forests.

This species usually went about in small flocks of six to a dozen members as it searched for food inside patches of dense vegetation of various types.

In the course of searching for food, the members of a flock usually followed a certain pattern, especially in the particular direction they traveled inside the forest and trees in which they fed. Once a feeding flock of this species is discovered feeding in a particular site inside the forest, it is interesting to watch the activities of the members. One notes immediately the thoroughness with which the members of the flock go over the individual component growths, including trees, shrubs, bushes, and vines. They take care not to miss the branches and leaves in a particular growth so as not to overlook any possible insect food. The members of a feeding flock usually pursue carefully any possible food item, such as insects. After they finish working over very thoroughly the branches and leaves of a certain plant, they transfer to the nearest growth that is located in the particular direction that the flock is following in its feeding at that particular time.

The feeding birds usually distributed themselves among the different parts of a particular plant, or on several plants in the site, which the members considered as possible sources of food items. Some of the birds stayed and worked the trunk and branches near the ground. If the feeding growth was a vine, some birds usually started their search for food at the base of the vine very close to the ground. Other members worked on the other branches higher up the plant and gradually worked to the very tips of the individual branches, including the leaves. The birds then flew to the next plant and followed the same procedure. If the next growth was too small, only a few birds worked in it and the others proceeded to the other plants in the direction the flock was following.

As soon as there were no more plants in the direction that the flock was taking in its feeding, the birds flew to plants nearest to those that they had already finished searching in. When there was a stream in the course of the feeding flock, the birds flew across this stream and proceeded to work in a tree, shrub, bush, or vine on the other bank, but always on one that was closest to the last plant visited. The birds then proceeded with the feeding activities in particular directions. Several times feeding flocks were followed as far as they allowed observations. A flock would start feeding on growths on a hillside, then proceed in a direction up the hill. Upon reaching the top or ridge, the group would go down the other side of the same hill until they reached the base. From there the flock would follow a new direction

to continue the feeding, and it would usually continue up a new hill until it reached the top or ridge, then follow a certain direction and continue the feeding.

On the other islands the feeding flocks sometimes were joined by other bird species, and a temporary feeding flock consisting of several species of small birds was formed.

FAMILY PYCNONOTIDAE BULBULS

Pycnonotus urostictus philippensis (Hachisuka, 1934)

Dinagat
Siargao*

On Dinagat and Siargao the Wattled Bulbul was very common, especially among the trees growing at the edges of forest patches, both the dipterocarp and scrub forests. The bird was also observed inside the clearings made in dipterocarp forests, inside the patches of secondary forests, and in the groves of trees, shrubs, bushes, and vines in parang vegetation. Rarely, a pair was seen feeding in the trees, shrubs, and bushes growing at the edges of cultivated fields as hedge growths.

The species ranged from the lowlands up to about 500–600 meters above sea level. Several pairs were observed feeding among the branches of the sparse growths of trees inside and along the edges of the clearings on the hills and mountain slopes, within the extensive areas of scrub forests, especially on Dinagat.

Occasionally, about five or six birds were seen feeding on the tiny fruits of a fruiting tree inside a clearing in the forest. When disturbed, they flew in different directions into the surrounding forest growths, showing that the birds were not really members of a regular feeding flock, but merely happened to congregate in the same fruiting tree at the same time to feed on the fruits.

Pycnonotus goiavier suluensis Mearns, 1909

Dinagat*

On Dinagat the Yellow-vented Bulbul was very common and was frequently met with among the trees, shrubs, and bushes that formed the hedges of cultivated fields in the lowlands and that grew along the edges of farms. The bird was common in the well settled areas.

A good number of this species were observed coming together late in the afternoons and roosting in particular sites in open country and grassland areas, where dense growths of tall grass were found with sparse mixtures of trees, shrubs, and bushes. In a particular locality the birds usually selected one site close to well cultivated areas, and large numbers of this bulbul would roost in this site. Early the next morning, the bulbuls habitually left the area, flying in different direc-

tions, usually in pairs, until none of the birds were left in the roosting site. Late in the afternoon, when the sun was about to set, the birds, again usually in pairs, returned to the roosting site to spend the night. These roosting places were not permanent and did not last for long periods. The birds stayed there only for a time and then transferred their roosting sites.

Pairs of this bulbul were frequently observed feeding in the plants in the gardens of the houses in the barrios. This species was really a bird of the farms, well cultivated fields, and open country, unlike *Pycnonotus urostictus philippensis*, which preferred to stay inside tree growths or close to forest areas.

The bird was also frequently met with inside the small patches of secondary forests, which were located close to cultivated and cleared areas, and inside the groves and patches of mixed growths of trees, shrubs, and bushes in parang vegetation. It was even observed feeding on the flowers of the coconut palms inside coconut groves, especially at the outskirts of the barrios.

Strangely enough, the species was not observed in the various localities collected in on Siargao. The ideal habitat types of the species were found well developed on Siargao, but we never met with the species in them.

The notes of the species were heard at all hours during daytime, even in places in the barrios and surrounding farms. The notes sounded like the syllables "Cul-cul-cul . . .," etc., repeated several times, followed by intervals of silence, then a series of calls again. In the late afternoons and early mornings, the birds that roosted in particular sites usually answered one another, before eventually leaving the roosting area.

The inhabitants of Dinagat called this bulbul "Cul-cul" or "Tangulul," local names based roughly on the characteristic call of the species.

Hypsipetes everetti everetti (Tweeddale, 1877)

Dinagat
Siargao*

The Plain-throated Bulbul was very common on both Dinagat and Siarago. On Dinagat it was always encountered in pairs inside the original forests, including dipterocarp and scrub forest types, ranging from the lowlands and foothills, deep into the interior, in forests in the hills and mountains, and up to the ridges and peaks of the mountains in the Mt. Kambinlio and Mt. Redondo localities. The bird was also fairly common in the hills in the interior of Siargao, in the scrub forests, and in the patches of mixed remnant dipterocarp and secondary forests that covered many of the hills.

On both islands the Plain-throated Bulbul had taken over the ideal

habitat types that the more widely distributed species, *Hypsipetes philippinus*, would have occupied, but strangely enough the latter was never observed on these two islands. The favorite habitat types of the present species of bulbul included the edges of farms and cultivated fields in the lowlands, which were adjoining patches of original forests, the clearings made inside the forests, the secondary forest patches, parang vegetation, and the groves of mixed tree-shrub-bush growths in open country and grasslands. This bulbul was also frequently met with feeding in the fruiting trees of all stories inside the logged-over dipterocarp forest areas, especially those found on the hillsides and mountain slopes.

The distributions of *H. everetti everetti* and *H. philippinus philippinus* on Mindanao is very interesting. In some localities in the provinces of Lanao del Sur, Lanao del Norte, and Misamis Oriental, the two species occur side by side in the same habitat types. Toward the eastern portion of Mindanao the two species occupy different habitat types and altitudinal requirements. *H. philippinus philippinus* occupies the areas rich in forests in the lowlands and at the lower elevations of hills and mountains in the area. *H. everetti everetti* occupies the higher elevations, preferably in well forested localities. There is a transition zone in mountain localities where the dipterocarp forests and midmountain forests come together. In general, however, *H. philippinus philippinus* prefers the lowland forests and the edges of original forests, especially dipterocarp forests, where they come in contact with clearings and cultivated areas. *H. everetti everetti* prefers to stay deeper inside original forests, including dipterocarp, midmountain, and the transition type of forest between these two.

Another very interesting phenomenon in the distribution of bulbuls on Mindanao is manifested in connection with *H. philippinus philippinus*, *H. everetti everetti*, and a third species, *H. rufigularis*. The last-named form occurs mainly on Zamboanga Peninsula or in western Mindanao, but its range extends across the narrow neck between Pangil Bay and Pagadian Bay, eastward to Lanao del Norte, Lanao del Sur, and a very small part of Misamis Oriental, west of an imaginary straight line that runs in a north-south direction along the western borders of Lake Lanao. In a transition area between the main bulk of eastern and northern Mindanao and the area immediately after the narrow neck that connects the greater eastern-northern portions of Mindanao with the Zamboanga Peninsula or southwestern Mindanao, there is a narrow zone of overlap in the distributions of *H. philippinus philippinus*, *H. everetti everetti*, and *H. rufigularis*. The three forms were collected in the forested localities in the eastern portion of Lake Lanao, but the zone of overlap in their ranges is not broad. All three forms occur in the same localities that are found in this narrow zone of

overlap, which includes part of Lanao del Sur, Lanao del Norte, and a small portion of Misamis Oriental, very close to the boundary line of Misamis Oriental and Lanao del Norte.

The rural inhabitants of Dinagat and Siargao called this bird "Tag-ma-ya" or "Tag-ba-ya," the same vernacular names they apply to *H. philippinus philippinus*. These same names are in common use in the parts of Mindanao where Cebuano Visayan is spoken as the main dialect.

FAMILY IRENIDAE LEAFBIRDS

Irena cyanogaster hoogstraali Rand, 1948

Dinagat*

The Philippine Fairy Bluebird was common inside the dense patches and areas of original dipterocarp forests, especially those growing in the small valleys among the hills and mountains in the mountainous interior of Dinagat near Mt. Kambinlio and Mt. Redondo. It was also met with inside both the dipterocarp and scrub forests that covered the hills and mountains throughout the island of Dinagat.

It was strange that the species was not observed at all on Siargao, especially in the localities in the interior where the hills were covered with dense growths of secondary forests and with small patches of mixed remnant dipterocarp and secondary forests.

The species was usually seen in pairs among the branches of fruiting trees inside the patches of forests, especially in fruiting fig trees. Occasionally, several birds of this species came together and fed in the same feeding tree. When sufficiently disturbed, they usually flew in pairs in different directions, showing that the birds feeding in the same fruiting tree were actually not members of a regular feeding flock; they just happened to come together in one fruiting tree at the same time.

Some of the members of the collecting party were experts at imitating the very characteristic calls of this bird. They attracted some of the birds to their campsite, which was usually under some trees of moderate height with dense foliage and in full fruit at the time. After several repetitions of the call by the collector, the closest bird or a pair of birds usually came to the site where the caller had stationed himself.

On the other islands of the Philippines the Fairy Bluebird was frequently observed feeding in fruiting trees inside the forests, usually in company of a group of monkeys, *Macaca* spp. Many of the local native guides who helped us in the collecting expeditions on the various islands had told us about this interesting association between the Fairy Bluebird and the monkeys; so whenever the collectors saw this bird or a pair of them actively flying about a particular site, they were on the look-

out for the monkeys. In many cases we observed the monkey-bluebird association to be true.

On the islands where this bird was observed accompanying feeding monkey bands, it was called "Su-nod A-mô" by the native inhabitants living in the forested areas. Translated literally, the name means "follows the monkey."

FAMILY TURDIDAE THRUSHES

Copsychus saularis mindanensis (Boddaert, 1783)

Dinagat*

Siargao*

The Dyal Thrush, or Magpie Robin or Dominico, was a fairly common bird inside the bamboo thickets and in the coconut groves near human habitations, even right in the barrios on Dinagat and Siargao. Several times it was observed inside the gardens near the houses of the people. The bird was also most likely to be met with in the patches of secondary forests and in the mixed groves of tree-shrub-bush growths in parang vegetation, and even in open country and grasslands with tree-shrub-bush growth occurring as hedges between cultivated fields and as sparse patches among the grass. As on the other islands of the Philippines, the species was fairly common on both islands, but not inside dense original forests.

The bird would often stay on the low branches of a bush close to the ground; once in a while it would hop on the ground after some food items. It does not walk on the ground like other regular ground birds, which walk and run. The Dyal Thrush progresses on the ground by hopping.

The male, with contrasting black and white plumage, would usually keep jerking his tail, opening and closing it as he perched on the low branch of a bush, shrub, or low tree. From time to time the bird would give out a low, harsh note, which it repeated several times but with quite long intervals in between. It would then change to a very melodious and complicated song. This bird is easily one of the most beautiful singers among Philippine birds.

The inhabitants of Dinagat and Siargao called this bird "Sa-laman-ti-gon" or "Lan-ti-gon."

Monticola solitarius philippensis (P. L. S. Müller, 1776)

Dinagat*

The Blue Rock Thrush was rarely seen on Dinagat and was not met with at all on Siargao. It is very possible that the time of collecting on Siargao, which was in late April until early May, was quite late to encounter this winter visitor to the island. Normally, about early April

the winter visitors in the Philippines begin to be scarce because the migrants are on their way back to their more northern breeding quarters.

Occasionally, single birds or, rarely, pairs were seen perching among the rocks and cliffs along the sea, especially in places along the western coasts of Dinagat where high and precipitous cliffs border the seacoasts.

FAMILY SYLVIIDAE OLD WORLD WARBLERS

Megalurus palustris forbesi Bangs, 1919

Siargao*

The Striated Canegrass Warbler was fairly common on both Dinagat and Siargao, but somehow no specimen was taken at all on Dinagat although it was seen often enough on this island.

On many occasions the bird was observed going about its feeding activities singly, usually on the ground in newly harvested ricefields in the lowlands of Dinagat. Close to our campsite in Barrio Kambinlio, Loreto, on Dinagat Island, this bird was observed many times, walking and feeding on the ground in vacant ricefields and in nearby areas where some carabaos were staked in open grass to pasture. Then, too, the bird was observed as it perched singly on the bare branches of low trees and shrubs growing along the edges of ricefields where they came close to the river and the hills. The bird was also heard frequently on both islands as it perched on the tops of the tall grass or reeds in marshy and swampy areas in the lowlands and small valleys among the hills and in the ricefields. It gave out its loud and very characteristic warbling notes, which could be heard for some distance around the area. A very favorite site for this bird to perch on and sing from was the top bare branches of the sparse growths of low trees at the edges of ricefields and other cultivated areas, or from the low trees growing sparsely inside the open, marshy fields that were otherwise grown to grass.

The notes include a series of warbles varied from time to time with syllables that sound like "To-to-riok," "Tor-to-riok," or "Tin-ti-riok," depending on how the human hearer interprets them.

The rural inhabitants of Dinagat and Siargao called this bird locally "Tor-to-riok" or "Tin-ti-riok," the most common names of this species given in many localities in the Philippines. In the Tagalog regions in central Luzon, the bird's local name is based on its habit of feeding and following the grazing carabaos in grassland areas and pasturelands, hence the name "Su-nod ka-la-bao," literally meaning "follows the carabao."

Cisticola exilis semirufa Cabanis, 1872

Dinagat*

Siargao*

On Dinagat and Siargao the Golden-headed Fantail Warbler was occasionally observed in the grasslands and open country, which were covered mainly with Kogon grass, *Imperata cylindrica* and *I. exaltata*, with sparse growths of low trees, shrubs, and bushes. In the wetter portions of these flatlands, taller grass species such as *Saccharum spontaneum* var. *indicum* were found in good stands.

When one walked along any of the trails that cut through the extensive grassland vegetation and open country covered with Kogon grass, areas which were common in the hills and rolling country on both Dinagat and Siargao, he was very likely to meet with a tiny bird that flushed suddenly and fast from among the dense growth of tall grass, its feeding site. The tiny bird would fly fast straight into the air for about 4 or 5 meters and then dive back into the dense growth of grass and disappear, not very far from the site where it had been disturbed originally. This tiny active bird was the Golden-headed Fantail Warbler.

The species preferred the drier grassland areas on Dinagat and Siargao and, for that matter, on the other numerous islands of the Philippines where it occurs; so it would be most likely encountered in grasslands and open country covered with tall grass in the lowlands and hills.

The rural inhabitants of Dinagat and Siargao called this bird "Pi-rot," the same vernacular name used by the inhabitants of Mindanao, Cebu, Leyte, Bohol, and Negros Oriental, where Cebuano Visayan is spoken. Another closely related bird, the Common Fantail Warbler, *Cisticola juncidis tinnabulans*, frequently occurs in grasslands located in wetter situations but not very far from where *C. exilis semirufa* is found.

Locustella certhiola ochotensis (Middendorff, 1853)

Siargao*

The Asiatic Grasshopper Warbler was accidentally met with only once on Siargao and not at all on Dinagat. It was skulking among the dense growths of tall grass that had taken over an abandoned clearing that had been planted to upland rice quite a while back. This clearing was situated on the side of one of a cluster of hills surrounding a small valley that was planted to wet rice, and it was surrounded by good growths of secondary forests.

On the other islands where this species was observed and even collected, the bird had the habit of skulking quietly among the dense tall grass in open grasslands and open country, especially on hillsides

and low mountain slopes. Discovery of the bird was often difficult and, in most cases, accidental.

This small warbler is a rare winter visitor in the Philippines.

Phylloscopus olivaceus (Moseley, 1891)

Dinagat*

The Philippine Leaf Warbler was encountered only inside the areas and patches of original dipterocarp forest and in scrub forests that were growing among the hills and mountains of Loreto, Dinagat, especially in the Mt. Kambinlio and Mt. Redondo localities.

The bird, singly or in pairs, usually stayed and fed among the branches and foliage of the trees of the lowest story. Occasionally, however, it was also observed in the crowns of the second-story and first-story trees inside dipterocarp forests.

This bird was not met with on Siargao. On the other islands of the Philippines where the species has been recorded, we observed that frequently a pair or more of this small leaf warbler went along as members of the mixed feeding groups of birds we commonly encountered among the trees of the lower stories, inside typical dipterocarp forests.

Phylloscopus borealis ssp.

Dinagat*

Siargao*

The Arctic Willow Warbler was a very common winter visitor on Dinagat and Siargao, as on the other islands of the Philippines.

The bird usually went about its daily activities singly, and rarely in pairs. It was often observed feeding actively among the foliage of bushes, shrubs, and trees. This small warbler could be found in low trees, medium-high trees, and tall trees. It was met with in the lowlands, at medium elevations on the sides of hills and mountains, and even among the growths on the ridges and peaks of the hills and mountains on Dinagat and Siargao. The species was encountered in vegetation of all types, both original forests and second growth, and even in bushes, shrubs, and trees that were found in cultivated areas and grasslands. Along the coasts the species was observed inside patches of mangrove forests and also in beach forests. As on the other islands of the Philippines, this small warbler could be found almost in all kinds of vegetation, including inside gardens near the houses in the barrios.

The Arctic Willow Warbler is easily one of the most common and most widely spread species of all the bird species that regularly migrate to the Philippines during autumn and stay there during winter and spring. In spite of its being very common on the numerous islands and its being widely distributed in all kinds of vegetation, this tiny bird is most likely to be missed because of its noiseless and unobtrusive habits

as it goes about its normal activities. One or a pair of this tiny warbler species may be feeding actively among the foliage of a bush, shrub, or tree; but the bird or the pair may not be discovered at all by the ordinary observer, even if he is very close to the plant.

***Orthotomus atrogularis frontalis* Sharpe, 1877**

Dinagat
Siargao*

On both Dinagat and Siargao, the Common Tailor-bird was one of the most common birds among the various bird species found in the cultivated areas, in secondary forests, and along the edges of the patches of original dipterocarp forests where they bordered open country and grasslands. In many cases this tiny bird was not seen at all, but its very characteristic loud notes were frequently heard coming from some growths. In fact, the bird was more often heard than actually seen. It would take quite some time and a very thorough and careful search among the foliage of the plant where the notes came from before the bird was seen at all.

The bird would usually stay inside the dense and tangled growths of bushes, shrubs, and thickets, including bamboo thickets, and would usually select the lower branches of the plant, close to the ground, where it would perch. It would hunt for possible food items among the dense foliage of bushes and other low growths. Its notes could be heard coming from the mixed growths of bushes, shrubs, and trees that serve as hedges between farms and other cultivated fields, as well as from patches of mixed tree-shrub-bush growths in parang vegetation. Many times on Dinagat and Siargao the loud notes of this tailor-bird were heard coming from dense thickets of bamboos, which were growing in well cultivated areas and very close to houses in the barrios. Hearing the notes was entirely different from locating the bird exactly from among the dense bamboo growths.

The notes of this species closely resembled the syllables "Tig-wa-teet . . . Tig-wa-teet . . .," etc., repeated several times as the bird moved from perch to perch among the branches and foliage of bush, shrub, tree, or thicket.

The rural inhabitants of Dinagat and Siargao called this bird "Tig-wa-ti," based on its very common call. The same vernacular name is used for this species by the Cebuano-speaking East Visayans on Mindanao, Cebu, Leyte, Negros, and other small islands in the eastern Visayas.

***Orthotomus nigriceps nigriceps* Tweeddale, 1877**

Dinagat*
Siargao*

The Black-headed Tailor-bird was fairly common on Dinagat and Siargao. It was frequently heard, if not actually seen, inside the dense

undergrowths and lower growths in patches of original dipterocarp forests, secondary forests, and scrub forests, as well as in the mixed growths of remnant dipterocarp and secondary forests.

The bird was more frequently met with on the lower elevations of hills and mountains on both islands. On Dinagat the species was often observed in the forests that grew in the small valleys and narrow flat-land strips among the hills in the interior. On Siargao, the bird was frequently met with inside the dense patches of mixed remnant dipterocarp and secondary forests among the hills in the interior.

In several collecting expeditions in various regions of the much larger island of Mindanao, we found this tailor-bird species rare and very seldom met with. Strangely enough, the species was met with much more frequently on the small islands of Dinagat and Siargao than in any particular locality on the much larger island of Mindanao.

The present tailor-bird species and its close relative, *Orthotomus cinereiceps*, which we collected in the Mt. Malindang area and in the interior localities of the Lanao del Sur, Lanao del Norte, and Misamis Oriental, have very similar habits and habitat preferences.

FAMILY MUSCICAPIDAE OLD WORLD FLYCATCHERS

Rhipidura javanica nigritorquis Vigors, 1831

Dinagat

On both Dinagat and Siargao the Malaysian Fantail was not really a rare species. The members of the collecting party observed birds of this species a number of times in several localities on both Dinagat and Siargao. The bird was seen several times in the gardens near the houses of the farmers, which were located on the edges of the barrios close to the cultivated fields. It was met with a number of times inside the mixed growths of trees, shrubs, and bushes, which were growing as hedges between cultivated fields in the foothills. This bird was even seen in coconut groves and bamboo thickets near the houses close to the barrios.

The bird would keep opening and closing its tail, as if opening and closing a fan, all the while accompanying these actions with a continuous stream of harsh and scolding notes. At the same time, it would keep flying from one perch to another nearby in the same site.

The bird did not mind the presence of people near its home area. It would just continue to stay in different perches and keep on with its scolding harsh notes.

It would usually stay in an area of about 2 hectares; and when breeding season came, a pair would stay in this particular area as the territory of the breeding pair. The pair usually selects a site with varied vegetation, often including bamboo groves, different species of trees, cultivated fields of corn or rice, banana groves, coconut palms,

and other plants that are very common around the immediate vicinities of houses. A breeding pair would usually stay in a particular grove of trees inside the home territory and would limit their feeding activities within the immediate surroundings of this particular site. The breeding pair would usually not stray from the home area unless unnecessarily disturbed by other animals.

The rural inhabitants on both islands called this bird "Ba-li-a-la" or "Ba-li-a," the same common local names that the Cebu Visayans and others who speak the Cebuano dialect apply to this species.

Rhinomyias ruficauda samarensis (Steere, 1890)

Dinagat*

The Rufous-tailed Jungle Flycatcher was uncommon on Dinagat and was not observed at all on Siargao.

This flycatcher usually stayed in the dark places inside original dipterocarp forests, which were growing in the small valleys among the hills and on the lower elevations of the hillsides and mountain slopes in the Mt. Kambinlio and Mt. Redondo localities. The bird usually perched on the lower branches of trees of the third story and on other lower growths inside the dipterocarp forests.

The species was also observed among the branches of trees growing on the hillsides and mountain slopes in the interior of Dinagat, especially among the lower growths of the scrub forests.

Its quiet and secretive habits and its preference for the lower growths as its perching sites, as well as its preference to stay in the darker and deeply shaded parts of the forests, usually made it difficult for this flycatcher to be easily discovered. A bird or a pair might be perching and feeding among the branches of a low tree, yet a casual observer coming very close to the site could still easily miss discovering one or both of these birds.

Ficedula basilanica basilanica (Sharpe, 1877)

Dinagat*

The Little Slaty Flycatcher was very rare on Dinagat, and the two specimens collected on this island were the only birds of this species met with during the entire four weeks of collecting. In both instances the birds were discovered accidentally among the branches of low trees, which were part of the dense lower growths in deeply shaded and dark sites of original dipterocarp forest.

The quiet and secretive habits of this bird, as well as its preference for perching on branches close to the ground and the forest floor, make it difficult to discover a small bird like this species, except by sheer chance.

Muscicapa griseisticta (Swinhoe, 1861)

Dinagat*

The Gray-spotted Flycatcher was fairly common on Dinagat and was met with twice on Siargao, but no specimen was taken on the latter island.

On Dinagat the species was usually observed perching singly on the bare branches of trees of moderate height that grew at the edges of the clearings inside the forests, including dipterocarp, scrub, and secondary forests. Occasionally, a bird was seen perching on a bare branch of a medium-high tree in open country, in one of the sparse tree-shrub-bush mixed patches in otherwise open grasslands, or along the sides of cultivated fields.

In each of the two encounters on Siargao, the bird was observed perching on bare branches, and it was not seen again during the short stay on this island.

This migratory flycatcher prefers to perch on bare branches at or near the tops of trees of moderate height, which are usually growing at the edges of clearings made inside the original and second-growth forests. From its perch the bird usually swoops down on some insect prey. More often than not, it returns to its former perch after catching the insect and consumes it there. Unless the bird is disturbed unnecessarily, it stays for long periods on the same perch and catches insects that happen to fly in the immediate vicinity of the perching area.

The Gray-spotted Flycatcher is one of the most common and widespread winter visitors in the Philippines. It is likely to be met with on most of the islands of the archipelago. However, its habits of staying singly in one site and of going about its daily activities quietly and unobtrusively, coupled with its characteristic of perching motionless on one perch for quite long periods, make the bird difficult to discover in its normal habitats; thus, it seems uncommon or even rare in most localities.

Hypothymis azurea azurea (Boddaert, 1783)

Siargao*

The Black-naped Blue Monarch, strangely enough, was met with only once on Siargao and not at all on Dinagat. The only specimen taken on Siargao was accidentally discovered perching motionless on a branch of a low tree, part of the lower growths of a dense patch of mixed remnant dipterocarp and secondary forest. In this instance the patch was one of several that grew on the lower slopes of some hills in the interior, but not very far from a small valley with cultivated fields planted to rice.

On the other islands of the Philippines, the Black-naped Blue Monarch is a common bird in secondary forests, in the patches of mixed

tree-shrub-bush growths in parang vegetation, in the small stands of trees, shrubs, and bushes scattered sparsely in grasslands and open country, and in the hedge growths between cultivated fields. Usually, this small bird stays silently and goes about its feeding activities unobtrusively, so that even if one or a pair is feeding among the lower growths of a patch, it can easily be missed. If he carefully watches the lower growths for any bird movements, an observer will most likely meet a pair of these birds not far from the edges of a patch of dipterocarp forest, especially in the sites where the forest adjoins a cultivated field or any cleared area.

Hypothymis helenae agusanae Rand, 1970

Dinagat*

Siargao*

The Short-crested Blue Monarch was fairly common on Dinagat but was uncommon on Siargao.

In our previous collections of birds in various localities on Mindanao, we found this species to be rare; yet, strangely enough, it was fairly common in several localities on Dinagat. It was observed fairly frequently inside patches of remnant original dipterocarp forests, occasionally inside scrub forests, and once in a while even inside patches of mixed remnant dipterocarp and secondary forests.

The bird was usually seen feeding among the lower branches of trees in the third story inside dipterocarp forests and among the lower trees in scrub forests. It usually preferred to stay among the lower branches of the lower tree growths in deeply shaded parts of the forests. The bird usually went about singly or in pairs, and it carried out its feeding activities quietly and with the least disturbance. This was one species that could easily be missed in its natural habitats.

Terpsiphone cinnamomea cinnamomea (Sharpe, 1877)

Dinagat*

Siargao*

The Rufous Paradise Flycatcher was uncommon on both Dinagat and Siargao. On Dinagat the bird was met with several times, either singly or in pairs, inside the dense areas and patches of original dipterocarp forests, especially in those that were growing in the small valleys and narrow strips of flatlands among the hills and mountains in the interior of the Mt. Kambinlio and Mt. Redondo localities. On Siargao the species was met with several times inside the dense patches of mixed remnant dipterocarp and secondary forests that covered some of the hills in the interior. The species was rarely met with in scrub forests at higher elevations of the interior localities on Dinagat.

This flycatcher had a very characteristic, loud whistling call that consisted of the same notes repeated many times with brief intervals between the notes. It was monotonous in both volume and pitch. Between one set of repetitions there were quite long intervals of quiet. The bird usually stopped calling when there were some disturbances close by.

Pachycephala philippinensis apoensis (Mearns, 1905)

Dinagat

Siargao*

The Yellow-bellied Whistler was a common bird inside the forests of Dinagat and Siargao. It was frequently observed going about in pairs and perching among the branches of trees of the lower stories in dipterocarp forests and among the trees in scrub forests that were growing in the higher elevations of hills and mountains in the interior of Dinagat. On both Dinagat and Siargao, this whistler was also met with inside the dense patches of secondary forests and in the mixed dipterocarp remnants and secondary forests in the hills in the interior, especially where there were cleared and cultivated areas nearby.

The birds went about their activities quietly and were most likely to be overlooked among the dense foliage of the trees where they were staying at the time.

FAMILY MOTACILLIDAE PIPITS

Motacilla flava simillima Hartert, 1905

Siargao* (1 ♂)

The Yellow Wagtail was met with only once on Dinagat. A flock of about five birds was disturbed among the sparse low growths in a wide marshy area between the wet ricefields and the hills in Barrio Kambinlio, Loreto. The species was never encountered again on Dinagat.

On Siargao a flock of seven birds was seen in a marshy area at the edges of the wet ricefields in the valley in Barrio Osmeña, Dapa, in the interior of the island. The species was not met with again in the various localities where collections were made.

On other islands of the Philippines, especially on nearby Mindanao Island, this winter migrant species had always been observed to be more rarely encountered than the much more common winter migrant wagtail, *M. cinerea*. Also, this present species is often observed in small flocks, usually of about five to eight members, frequently feeding on flat marshy areas or newly prepared ricefields to be used for wet-rice culture.

On both Dinagat and Siargao the Yellow Wagtail was locally known

as "Bang-ki-yod" and "Sid-yo-sid-yot," based on the rapid up-and-down flicking movements of the tail as it runs. The same local names are applied to the Gray Wagtail.

Motacilla cinerea robusta (Brehm, 1857)

Dinagat*

Siargao*

On Dinagat the Gray Wagtail was met with usually singly along the numerous small and shallow streams that originated in the mountains in the interior of the Mt. Kambinlio and Mt. Redondo localities. These streams usually flowed down to the lowlands along the western coasts.

On Siargao this bird was usually observed singly on the banks of small streams and along the beds of streams that came down from the cluster of hills surrounding the small valleys in the interior. These small streams flowed into the well cultivated valleys, which were devoted mainly to wet-rice culture. The Gray Wagtail was frequently flushed from the short grass that covered the marshier parts of the valley.

The bird usually went about its search for food singly, staying on the exposed streambeds and, at times, even in the shallow waters at the sides of the flowing stream. In looking for possible food items among the gravel and sand of the streambeds, the bird would keep running erratically in one direction, picking up food items on its way. It would spend its time walking and running along the streambed until it was disturbed; then it would fly away to another site, usually along the river- or streambed, alight there, and resume its routine of looking for food items. Each time it was flushed from a site, it would give out its very characteristic notes and transfer to another site not very far away.

The Gray Wagtail has the habit of flicking its tail vigorously up and down as soon as it alights on the ground. The frequency of the vigorous tail movements then lessens as the bird walks and runs to look for its various food items.

In the course of its feeding along the shallow streams, it would occasionally alight on an exposed rock in the deeper part of the stream, with the water running on both sides of the rock. Here the bird would stay for some time, occasionally flicking and wagging its tail vigorously and walking around the dry parts of the rock picking up items from the flowing water. Eventually, it would transfer either to the exposed streambed close by or to another exposed rock in the middle of the stream. There it would do the usual routine of flicking and wagging its tail vigorously, moving around its perch and picking up food bits from the rock and flowing water. It would not stay at this site very

long before it flew to a site either nearby or perhaps far away, but still along the course of the stream.

This wagtail was also frequently observed walking and running on roadbeds, looking for food along the small dirt roads on the western coasts of Dinagat. Occasionally this bird was seen feeding on the sandy seashores, especially during low tides.

The bird's flight is undulating: it goes upward a short distance, then downward a short distance, alternating up and down.

When this wagtail is followed along a stream and is disturbed as it feeds on the streambed, it flies away from the site in its usual undulating manner but not far above the ground. It follows the course of the stream for some distance; and, upon reaching a favorable spot, most likely a curve, it swerves to one side and then cuts through the growths along the banks, leaving the stream for a short distance. The bird then doubles back to its original site by following the banks of the stream but hidden by the vegetation growths along the banks from any one who may happen to be in the stream. At some distance from the original site, the bird may come back toward the stream again and alight on the streambed in some spot. However, when the disturbance is excessive, the bird flies upward quite high and completely leaves the place for another area some distance away.

The Gray Wagtail is one of the winter migrants that are very widely distributed among the numerous islands of the Philippines, but never in very large numbers in a given area.

The inhabitants of Dinagat and Siargao called this bird "Bang-ki-yod" or "Sid-yo-sid-yot," based on its characteristic of flicking the tail vigorously as it runs.

Anthus novaeseelandiae lugubris (Walden, 1875)

Dinagat*

Siargao*

Richard's Pipit was very common on Dinagat and Siargao and was frequently observed on the ground in newly harvested ricefields, in newly plowed fields, and even in the pasturelands covered with very short grass. Such areas covered many hills in the interior of both islands.

Usually, a dozen or more of this species of pipit were observed actively feeding on the ground in open country and open meadows grown to short grass, or without any vegetation at the time. The birds did not really form regular flocks, but many birds from different places sometimes congregated together for feeding on some food items that happened to be abundant at a particular place. On both islands a favorite site for such temporary feeding groups of pipits was a par-

particular grazing area of cattle and carabaos on some hillside in the interior, but not very far from the cultivated fields in the lowlands.

The inhabitants on Dinagat and Siargao called Richard's Pipit "Sid-yo-sid-yot," the same local name given to the Gray Wagtail.

Anthus gustavi gustavi Swinhoe, 1863

Dinagat*

The Petchora Pipit was a common winter visitor that was observed quite often on Dinagat and Siargao. However, the species was not collected on Siargao.

On Dinagat, this bird was usually observed feeding singly on the forest floor among the dense forest undergrowths. It often walked and ran in and out of the dense growths and, temporarily, into the clear areas between the larger forest trees, then back again into the dense undergrowths. One had to be familiar with the habits of this bird in order to be able to discover it among the dense growths in its favorite habitat. Frequently the ordinary observer would easily miss this small ground bird because of its quiet ways in the course of feeding and searching for food. Even if one were already close to a feeding bird, he might easily miss it.

The bird was frequently met with inside the original forests, both the dipterocarp and scrub forest types. Occasionally, it was also met with inside patches of secondary forests and in the mixed remnant original dipterocarp forest and secondary forest among the hills in the interior of Dinagat.

Once seen walking and running on the forest floor, this bird would be very difficult to follow among the dense undergrowths, into which it would immediately run. Once in a while, it would flush, fly low (but for only short distances), and then return to the forest floor and immediately run fast into the nearest undergrowth. If one followed the bird into this particular site in order to locate it for observation, he would usually not find the bird because it runs very fast and often proceeds far into the forest.

The species was never met with outside of dense forest cover.

FAMILY ARTAMIDAE WOOD-SWALLOWS

Artamus leucorhynchus leucorhynchus (Linné, 1771)

Dinagat*

Siargao*

The White-breasted Wood-swallow was very common on Dinagat and Siargao. It was frequently met with close to human habitations and the cultivated fields nearby. A solitary bird, or several of them, was a common sight as it soared in flight over the fields and meadows

that adjoined the barrios or as it perched on some bare branches of trees growing along the edge of the farms, some of which served as hedges between cultivated fields. Sometimes a group of six or more birds perched on the fronds of coconut palms in and around the barrios.

During the months of March, April, and May, the wood-swallows on the various islands of the Philippines were observed either in pairs or in groups of five to seven members as they soared over the fields around a particular site or perched on some bare tree branches or on the fronds of a coconut palm, often very close to one another. Most often the group was a family consisting of the parents and the young birds of the season, which for some time would be going together and staying together in a particular site close to the nesting spot.

The White-breasted Wood-swallow is not really a large bird, but it is easily the most fearless and aggressive of all the Philippine bird species, including even the large birds of prey. During the breeding season, especially, the mating pair, singly or together, is not afraid to attack any larger bird, or even mammal, that comes within the limits of the nesting territory. The small birds are not minded much, but birds bigger than the wood-swallows are immediately attacked if they happen to trespass the area of the nest. Crows, hawks, owls, orioles, hornbills, and any other large species of birds are immediately attacked by the mating pair. On one occasion a mating pair attacked a Monkey-eating Eagle that was crossing a cleared area in a heavily forested locality in Miatan, a mountain barrio of Katipunan Municipality in Zamboanga del Norte. The eagle unwittingly passed close to the nesting tree of a pair of wood-swallows, which at the time were both perching on the top branch of the nesting tree itself. Both birds immediately attacked the eagle, flying higher than the eagle and swooping down on its head. Every time one of the birds hit the head of the flying eagle, a feather came off. The poor eagle could do nothing, so it had to leave the area as fast as it could. It entered the nearest dense patch of dipterocarp forest, and the wood-swallows returned to their nesting tree.

When they trespass within the nesting area, carabaos, cattle, any grazing animal, and even man himself are attacked by these fierce little birds. The pair would not hesitate to swoop down and peck a man's head, often inflicting wounds on the scalp and pulling off some hair. The White-breasted Wood-swallow is primarily a bird of the cultivated areas and open country. It may be found in the vicinity of forested areas if there are clearings inside these areas, which may still be surrounded by forests.

The characteristic notes of the species closely resemble the syllables "Git-git-git . . ." or "Gik-gik-gik . . .," etc., repeated several times by

the bird while in flight or on perch. The bird is beautiful to see when it is soaring on motionless wings over a clear field while uttering its very characteristic notes.

The inhabitants of Dinagat and Siargao called this bird "Git-git" or "Gik-gik," the same vernacular names used by the Cebuano-speaking inhabitants of Mindanao, Cebu, Bohol, Leyte, and many other islands. Some of the inhabitants of Luzon also call this bird "Gik-gik" or "It-it."

FAMILY LANIIDAE SHRIKES

Lanius cristatus lucionensis Linné, 1776

Dinagat*

Siargao*

On Dinagat and Siargao the Brown Shrike was observed to be fairly common, in spite of the lateness in the bird migration season when collections were carried on, especially on Siargao. Starting in April, this migratory species begins to be uncommon, especially in the easternmost and southernmost areas of the Philippines because by this time the birds begin to be on the migration trip back to their summer breeding quarters.

The birds that were seen were usually observed perching singly on the branches of some low trees, shrubs, bushes, or even the tops of fence posts along the sides of cultivated fields or farms. This shrike was also seen quite often perching on the top of the plants inside the gardens close to the houses in the barrios and farm areas.

The Brown Shrike usually went about its feeding activities singly and frequently stayed in one particular site for some time until disturbed or until it was time to leave on its migration trip somewhere else.

The species is one of the most common and widespread forms of winter visitors in the Philippines. From about the last week of September, the shrike begins to appear in the northern islands of the Philippines; by middle of October the species can be met with on most of the islands in the southern regions of the archipelago. Migration within the archipelago is quite rapid.

This shrike is met with even in the very centers of the large and busy cities, such as Manila, Cebu, Iloilo, and others, where it stays in the trees that line the streets. It is also found in the gardens, in the densely settled areas as long as there are some plants to perch on and feed in, and in the parks and public gardens in the cities and towns. The bird is most common in the rural areas, in the farm regions, and in the hills.

This species emits very characteristic, harsh notes that are easy to remember because they are simple: "Kee-kee-kee," etc., given out in

variable lengths, sometimes just a few repetitions and sometimes many. From October to March these loud, harsh notes are frequently heard in many places. About the beginning of March another type of notes that comprise the whisper song can be heard from some birds. In order to hear the whisper song, one has to be really close to a bird that is perching singly on a low branch or a fence post at the edge of a farm, where it is not being disturbed. Given a chance, the bird will give out its whisper song, a beautiful combination of notes and varied sounds uttered softly, as if the bird meant it only for the listener close by.

The inhabitants of Dinagat and Siargao set traps for this bird and quite a number were taken. Every year the people do this not only on these two small islands but also on many other islands all over the Philippines. The odd thing about the practice is that the people do not really depend on the bird as an important food item, unlike in Taiwan where this species is sold in great numbers in the markets to be eaten.

The Brown Shrike was called "Ti-ba-las" or "Ti-bas" by the inhabitants of Dinagat and Siargao. The same names are used by the inhabitants of Mindanao, Cebu, Bohol, Leyte, and other localities where the Cebu Visayan dialect is spoken.

FAMILY STURNIDAE STARLINGS

Aplonis panayensis panayensis (Scopoli, 1783)

Dinagat*

Siargao*

The Philippine Glossy Starling was very common on Dinagat and Siargao. The bird was usually met with in flocks of about a dozen or more members. On the average, each flock always included both the old birds and the young birds of the season.

A particular flock flew around certain localities. They fed on the fruits of wild fruiting trees of various species, including several forms of figs, which were growing in various sites. Among the feeding sites were the edges of the patches of remnant original dipterocarp forests, in places where they adjoined cultivated areas; the fruiting trees, shrubs, and bushes found growing inside the gardens near houses in the barrios; the mixed growths of trees, shrubs, and bushes that formed the hedges between the cultivated fields and farms; the patches of mixed growths of trees, shrubs, and bushes growing in parang vegetation and open country; and the sparse growths of fruiting trees frequently found around farm houses and in the other areas of cultivated countryside.

On the numerous islands of the Philippines, the Philippine Glossy Starling is not really a bird of the deep forest, but more of the forest edge, secondary growths, farms and cultivated areas, and open country.

On many other islands of the Philippines where we had carried on bird collections during past years, we observed many times that the Philippine Glossy Starling roosted regularly in particular sites in a locality in large numbers, frequently including 100 or more birds. The roosting birds were composed of several flocks that came to this particular site only during late afternoons in order to roost. The favorite site for this starling roost was often inside coconut groves or in stands of Buri palms (*Corypha elata* Roxb.) located in cleared or cultivated areas, but not very close to houses. The starlings would roost in this roosting site regularly, until they were very much disturbed, most often by man; then they would transfer somewhere to another site, often not close to the former site.

With the sun still much above the horizon, about 2 hours before actual sunset, it was observed in one roosting site that the starlings would start arriving in flocks of various sizes, coming from different directions. A flock would locate itself immediately, and the members would alight on the fronds of palm trees and give forth an incessant stream of notes, resulting in a din of sounds. The intensity would continue to increase as more of the birds arrived. When darkness began to set in, the din gradually decreased until it would really be night before the birds would keep quiet. The next morning there was a resumption of the din resulting from the notes of the birds in the roost which would be very actively moving about the immediate vicinity of their particular roosting site. By the time the sun was quite high, practically all the flocks had left the roosting area and the roosting site was silent again until the first flock arrived late in the afternoon to roost.

On some of the islands we came upon particular sites where this starling nested in great numbers. Again, the sites were either in coconut groves or in stands of Buri palms. The birds placed their nests in the axils of the coconut leaves or Buri palm leaves. Usually the inhabitants in the barrio where Buri palms are found cut the leaves regularly, leaving only the basal parts of the leaf bases still attached to the large trunk. The Buri palms usually selected by the starlings for nesting were still young and growing trees; so the leaf bases were still attached to the trunk and afforded ideal sites for the nests. The starlings placed their nests in the deep pocketlike structures produced by the leaf bases (which were cut short) and the trunk of the Buri palm, and the nests were very securely placed inside. It was most interesting to watch the birds come out of the narrow space between the leaf bases and the trunk of the palm. When the nesting season was quite advanced and the parent birds could perch on the cut ends of the leaf bases, one was reminded of many human beings staying in apartment houses with many floors.

Frequently, man has made use of the glossy starling's habit of nesting together in large colonies. Whenever he discovers a large number of nesting glossy starlings, he immediately prepares long bamboo culms, each about 5-6 meters long, and provides a circular opening near one end of each internode. He then places these bamboo culms securely in horizontal positions between any two coconut palms that are closest to each other or ties the bamboo culms among the long-petioled leaves of the Buri palms. Almost as soon as the bamboo culms are in place, the nesting birds immediately claim one internode each for the nest site of a pair. The birds line the internodes with grass and fibers and lay their eggs inside the culms. The human operator usually waits until the young birds are old enough and of sufficient size, and then he gathers them in large numbers for food. Normally the human operators of the nesting colony will not gather all the young birds, but will leave a good number to continue to develop and eventually reach maturity and breed. The birds usually continue to breed in the man-prepared nesting sites, in addition to the natural nesting sites among the coconut palms and Buri palms.

In many localities this species was observed nesting on the ends of the branches and trunks of decaying forest trees left standing at the edges of cultivated fields or inside the clearings made in forest patches. Only a small number of birds nested this way.

The inhabitants of Dinagat and Siargao called this glossy starling "Ga-lan-ciang" or "Gan-ciang," the two most commonly used local names for this species in many parts of the Philippines, especially in the southern region where Cebuano Visayan is spoken extensively.

Sarcops calvus melanonotus Ogilvie-Grant, 1906

Dinagat*

Siargao*

The Coletos was a fairly common bird in the cultivated areas and open country close to and in the hills in the interior, on both Dinagat and Siargao.

The species usually went about in pairs in its feeding activities. A pair usually fed on fruiting trees growing at the edges of patches of remnant original dipterocarp forests and secondary forests, inside the patches of mixed tree-shrub-bush growth in parang vegetation, and in the trees and shrubs that formed the hedges between cultivated fields and farms.

Sometimes several pairs of Coletos would come together in the same fruiting tree and form a temporary flock that would go about as such and feed as one flock. Eventually, after some time, the member pairs of the temporary flock would resume their feeding in pairs or, at most,

in small family groups, especially during the latter part of the breeding season when the young birds of the season would feed with the parents for some time before being on their own.

The nests of this starling were frequently made inside rotting branches or trunks of decaying trees left standing inside a clearing or even in cultivated areas. Other favorite nesting sites of the Coletos included the decaying and broken trunks and branches of large trees that were still standing inside the clearings made in otherwise dense patches or areas of original dipterocarp forests, inside the dense patches of secondary forests, and inside the dense patches of mixed remnant original dipterocarp and secondary forests that were growing on the hillsides and mountain slopes in the interior.

The Coletos has a very characteristic clicking sound, followed immediately by loud and high-pitched metallic notes, which, once heard, cannot be easily forgotten. These sounds are not produced by any other Philippine bird species, and no similar sound is made by other birds.

The inhabitants of Dinagat and Siargao called this bird "Sal-ing" or "I-ling." Both these local names are also used for the same species on Mindanao, Cebu, Bohol, and Leyte and in other localities where the people speak Cebu Visayan.

FAMILY NECTARINIIDAE SUNBIRDS

Anthreptes malacensis griseigularis (Tweeddale, 1877)

Dinagat*

Siargao*

The Plain-throated Sunbird was a common species on Dinagat and Siargao. It was usually observed feeding in pairs among the inflorescences of coconut palms inside coconut groves. It was also frequently met with feeding on flowering trees at the outskirts and edges of remnant original dipterocarp forest patches, inside the patches of mixed tree-shrub-bush growths in parang vegetation, among the flowering trees and shrubs that formed the hedges of cultivated fields, and among the sparse growths of flowering trees in open country and grasslands, usually with tall grass and scant growths of bushes. This sunbird was seldom met with at the higher elevations in the Mt. Kambinlio and Mt. Redondo localities, although occasionally one or a pair of this species was observed feeding among the flowers of some of the trees in scrub forests on the hilltops and ridges of the lower mountains in the interior of Dinagat.

Quite frequently the Plain-throated Sunbird was observed feeding in pairs in the same flowering trees where other species of sunbirds were also feeding at the time, including *Nectarinia jugularis jugularis* and *N. sperata sperata*.

On Dinagat and Siargao the Plain-throated Sunbird and all the other species of sunbirds were called "Tam-si" by the rural inhabitants, including the species of *Nectarinia* and *Aethopyga*. The same local name is given to all sunbirds by the rural inhabitants of Mindanao, Cebu, Bohol, Leyte, and other islands of the Eastern Visayas.

Nectarinia sperata sperata (Linné, 1766)

Dinagat
Siargao*

Van Hasselt's Sunbird, a colorful species, was very common on both Dinagat and Siargao. It was observed staying in a wide variety of habitat types. It was met with in the lowlands, usually in pairs, feeding on the flowers of the coconut palms in coconut groves and often in the company of *Nectarinia jugularis jugularis* and *Dicaeum australe australe*. It was also common among the mixed tree-shrub-bush growths that formed the hedges between cultivated fields and farms, and among the sparse growths of trees and shrubs in open country and grasslands. It was frequently observed inside the mixed tree-shrub-bush patches in parang vegetation, inside secondary forests, inside the patches of remnant original dipterocarp forests, and inside the scrub forests that covered the higher elevations of the hillsides and mountain slopes in the interior, especially on Dinagat. This colorful sunbird also frequently visited the flowering plants in the gardens near the houses, which were built on the sides of farms and other cultivated areas, especially among the foothills.

In many localities on Dinagat and Siargao, the present species occurred side by side with *N. jugularis jugularis*, a phenomenon not common on the larger islands in the Philippines where both species occur, including Mindanao, Luzon, Negros, and a few other islands, especially in the Eastern Visayas. On these larger islands *N. sperata sperata* and *N. jugularis jugularis* were observed occurring in the same localities, but they usually did not stay together in the same habitat types. On Dinagat and Siargao both species were frequently observed feeding side by side on flowers of the same flowering trees. Such trees grew along the edges of the patches of remnant dipterocarp forests, inside secondary forests, in the patches of mixed tree-shrub-bush growths in parang vegetation, among the trees, shrubs, and bushes in the hedges between fields, and in flowering trees growing in open country and grasslands. Occasionally both species were even met with inside mangrove and beach forests along the seashores on both Dinagat and Siargao.

The inhabitants on Dinagat and Siargao called this sunbird "Tamsi," the same name they applied to the other species of sunbirds.

Nectarinia jugularis jugularis (Linné, 1766)

Dinagat
Siargao*

The Olive-backed Sunbird was the most common of the several sunbird species found on Dinagat and Siargao. It was frequently observed in pairs feeding on the flowers of coconut palms inside the coconut groves in many localities on both islands. It was also seen frequently among the plants in the gardens near houses in the barrios, and even inside the towns. This sunbird was very common among the flowering trees, shrubs, and bushes that grew as hedges between the cultivated fields in the lowlands and on the hillsides in the interior. It was often met with among the flowering trees, shrubs, and bushes growing in the open country and grasslands. The bird was very common inside mangrove and beach forests along the coasts of both islands.

On the other islands of the Philippines, especially on the larger ones, the Olive-backed Sunbird is primarily the species that stays in gardens near the houses inside the regular settlements, as well as in the open country, cultivated areas, coconut groves, and cultivated areas where human activities are frequently found. This sunbird does not mind the presence of man; so it is commonplace for a pair to locate their nest inside a garden close to the house. In addition, the birds frequently enter houses to get cobwebs from the walls and corners.

On Dinagat and Siargao the two sunbird species, *Nectarinia jugularis jugularis* and *N. sperata sperata*, were observed occurring side by side, in the same habitats in the more open situations, except that *N. jugularis jugularis* was more frequently met with inside the mangrove and beach forests along the coastal areas. *N. sperata sperata*, on the other hand, was more often seen in the deeper parts of original dipterocarp and scrub forests, which were found growing in the hills and mountains in the interior.

The Olive-backed Sunbird is the real and original species that the native inhabitants on most islands in the southern Philippines call in the vernacular "Tam-si." This is especially true of the settlers from Cebu, Bohol, western Leyte, Negros Oriental, and where the Cebuano dialect is spoken.

The Olive-backed Sunbird is one of the Philippine bird species that possess a beautiful and intricate song. Its ability to sing a beautiful song is often dealt with in the vernacular poetry.

Aethopyga pulcherrima pulcherrima Sharpe, 1876

Dinagat
Siargao*

The Mountain Sunbird was fairly common, especially on Dinagat, but it was uncommon on Siargao. It was usually observed going about

in pairs among the lower tree growths inside dense patches and areas of original dipterocarp forests and inside scrub forests found in the hills and mountains in the interior. Occasionally, a pair was met with inside the dense patches of secondary forests and mixed remnant original dipterocarp and secondary forests, among the hills and mountains in the interior of both Dinagat and Siargao. On Siargao this species was occasionally observed, singly or in pairs, inside the scrub forests that grew on the ridges and at the higher elevations of hills in the interior.

The Mountain Sunbird was rarely observed in the cultivated areas and open country in the lowlands on both islands. This species was really more a bird of the forest growths in the higher parts of hills and mountains in the interior.

The casual observer would most likely miss this tiny bird, or a pair of them, among the dense foliage and green background of the lower forest growths.

Aethopyga shelleyi bella Tweeddale, 1877

Dinagat*

Siargao*

The Lovely Sunbird was uncommon on both Dinagat and Siargao. On Dinagat the species was usually met with in pairs, actively feeding on the flowers of trees and shrubs of the lowest story inside the patches and areas of remnant original dipterocarp forests, as well as among the lower trees inside scrub forests, which were found in the higher elevations of the hills and mountains in the interior near Mt. Kambinlio and Mt. Redondo. Occasionally, a pair was observed feeding among the flowering trees in secondary forests and inside the patches of mixed remnant dipterocarp and secondary forests among the hills in the interior of Siargao.

This sunbird usually preferred to feed on the flowers of low trees and shrubs, and occasionally even on the flowers of the flowering bushes, which were part of the undergrowths inside the much taller types of vegetation. A bird or a pair of them could be easily missed among the dense foliage of a tree, shrub, or bush on which the bird, or the pair, might be feeding all the while.

Arachnothera longirostra flammifera Tweeddale, 1878

Dinagat*

The Little Spider Hunter was a rare bird on Dinagat and was not met with at all on Siargao. This species was seen only a few times, either singly or in pairs, usually at the edges of dense patches of remnant original dipterocarp forests. It often stayed among the branches of the low trees and other growths that formed the third story.

The Little Spider Hunter often flew quite low, not far from the forest floor, and at a fast rate. It was very adept at flying fast in and

out among the numerous trunks inside the forest without hitting any of them accidentally.

It was usually by pure chance that a single bird or a pair of this species was met with. On Dinagat a pair was once observed actively feeding on food items found among the leaves of a young tree, one of the sparse growths that had started to flourish inside a small abandoned clearing. The clearing was located inside a patch of dipterocarp forest on top of a low hill in the interior of the Mt. Kambinlio localities. This was about the only instance when this species was observed in a clearing, although the site was well surrounded by dense growths of original dipterocarp forests; otherwise, the normal habitat type of this bird was the interior parts of dense forests.

On Bohol, Leyte, and Samar, the Little Spider Hunter was very rarely encountered; and, when met with, it was always inside dense original dipterocarp forests.

FAMILY DICAETIDAE FLOWERPECKERS

Prionochilus olivaceus olivaceus Tweeddale, 1877

Dinagat

The Olive-backed Flowerpecker was quite common on Dinagat but was not observed at all on Siargao. It was usually observed singly or in pairs inside the patches and areas of remnant original dipterocarp forests or along their edges. Occasionally, the species was met with among the trees in scrub forests on the higher elevations of hills and mountains in the interior of Mt. Kambinlio and Mt. Redondo localities. Rarely, this flowerpecker was met with in some fruiting trees inside the dense patches of secondary forests among the hills in the interior.

At the edges of patches of dipterocarp forests that adjoined cleared areas and open country, we observed this flowerpecker on several occasions as it fed singly or in pairs, each time on the fruiting trees, including those of the first, second, and third stories. On Dinagat the bird was also observed feeding on the fruits of some shrubs that were part of the dense lower growths inside patches of dipterocarp forests. Occasionally, this flowerpecker was seen feeding singly or in pairs on the fruits of fruiting trees of the first, second, and third stories growing inside abandoned clearings in dipterocarp forests.

Frequently, this flowerpecker fed in the same feeding trees where other species of flowerpeckers were also feeding at the same time. On several occasions pairs of this flowerpecker were seen feeding in the same fruiting tree as pairs of *Dicaeum australe australe* and *Dicaeum hypoleucum pontifex* and several *Zosterops everetti basilanica*. The trees were located at the edges of dense patches of remnant original dipterocarp forests that adjoined clearings inside the forests.

The three forms of the Olive-backed Flowerpecker that have been recorded on the various islands of the Philippines have been observed to be always rare or uncommon, and this species has always been considered as such. In our previous bird collecting on the various islands where any forms of this species occur, the species has always been poorly represented among the birds collected.

During recent collecting on Dinagat and Siargao, some interesting facts have been observed in connection with the occurrence of several species of birds on these two islands. Strangely enough, but it was observed to be the case, several bird species that had always been considered rare on the much larger islands where they had been recorded proved to be very common, common, or fairly common on the two small islands of Dinagat and Siargao. The species also showed wider distribution in terms of the broader range of habitat types and the wider altitudinal ranges that these species occupied when traced from the lowlands to the highest elevations on the islands where they had been recorded. The relative sizes of the islands where the various species occur may have much to do with the interesting phenomena of distribution as observed on Dinagat and Siargao.

One interesting observation is that rare bird species on the larger islands are not as rare in their occurrence on the small islands. Another interesting observation is that bird species with very restricted distributions on the large islands, because of their highly specialized habitat type preferences, have been found to be much more widely distributed among a much greater variety of habitat types on the small islands. Still another interesting observation is that some bird species have very restricted altitudinal ranges on the larger islands: some species are found only at high elevations, others only at moderate elevations, and still others only at the lower elevations. Some of the bird species with very restricted altitudinal ranges on the large islands have been found to occur from the lowlands up to the highest elevations on the small islands. Of course, the highest elevations on Dinagat and Siargao are not as high as those on the large islands we had collected in prior to our work on the two small islands. Nevertheless, the phenomena are interesting and certainly warrant further study.

***Dicaeum bicolor bicolor* (Bourne and Worcester, 1894)**

Dinagat*

The Bicolored Flowerpecker was rarely met with on Dinagat and was not seen at all on Siargao.

On three different occasions one pair of this species was seen feeding on tall fruiting trees of the first story at the edge of a dense patch of remnant original dipterocarp forest, which adjoined large clearings made on a hillside in the interior localities of Mt. Kambinlio. On two other

occasions, one pair each of this flowerpecker was observed among the top branches of trees in scrub forest on the lower slopes of mountains in the interior of the Mt. Kambinlio localities.

The species was not met with in the more open situations among the cultivated areas.

Dicaeum australe australe (Hermann, 1783)

Dinagat

Siargao*

The Philippine Flowerpecker was the most common flowerpecker species on both Dinagat and Siargao. It was observed going about its feeding activities usually in pairs. In many instances several flowerpeckers of this species were seen feeding together at the same time in the same fruiting trees, shrubs, or bushes, together with other species of flowerpeckers and some other birds belonging to different groups. Thus, in many instances we observed *Dicaeum australe australe*, *Prionochilus olivaceus olivaceus*, and *D. hypoleucum pontifex* in the same fruiting tree feeding on the fruits. Also observed feeding in the same fruiting plants were *Zosterops everetti basilanica* and, occasionally, *Hypsipetes everetti everetti*. These different species of birds fed together without any signs of conflict among them. When disturbed unnecessarily, the feeding birds usually flew in pairs and in different directions.

The Philippine Flowerpecker was found in many types of habitat on Dinagat and Siargao and had a very wide range all over the two islands. It was found in the lowlands, where the greatest numbers were found, and up in the higher elevations among the forests there, but only in small numbers. It was frequently met with among the flowering trees, shrubs and bushes that were growing along the edges of the cultivated fields and farms in the lowlands and into the hills. It was also observed in the mixed growths of trees, shrubs, and bushes in open country and in grasslands; in patches of dense mixed growths of trees, shrubs, and bushes in parang vegetation; in secondary forests; and at the edges of original forests, including beach forests, dipterocarp forests, and scrub forests. This species was even observed at the edges of mangrove forests at the coasts. But the most likely habitat types of the Philippine Flowerpecker were coconut groves, gardens close to houses at the edge of the barrios and close to farms, and other places not really inside forests.

This flowerpecker produces the very well known notes by which the rural inhabitants, whether on Dinagat, Siargao, or on any other island in the Philippines, recognize the species and know of its presence in a fruiting tree.

Some of the rural inhabitants of Dinagat and Siargao called this flowerpecker "Si-wit," and others called it "Pa-na-gô-tô." The latter vernacular name is very widely used as the local name for this flowerpecker and for the other forms of flowerpeckers that may be found in many localities on Mindanao, Cebu, Bohol, Leyte, Negros, and other smaller islands in the Visayas and Mindanao regions, where the Cebu Visayan dialect is spoken by the inhabitants.

Dicaeum hypoleucum pontifex Mayr, 1946

Dinagat*

The White-bellied Flowerpecker was fairly common on Dinagat but was not met with at all on Siargao. It was usually observed singly or in pairs feeding on the fruiting trees of the first and second stories inside patches of remnant original dipterocarp forests. These patches grew in the small valleys among the hills and on the lower portions of hillsides in the interior localities of Mt. Kambinlio and Mt. Redondo. Occasionally, the species was seen feeding among the trees in the scrub forests at the higher elevations of hills and mountains in the Mt. Kambinlio localities. A number of birds of this species were observed feeding in tall and medium-high fruiting trees that were growing inside the abandoned forest clearings made in scrub forests areas among the hills and mountains in the interior of Dinagat. Rarely, this flowerpecker was seen feeding on fruiting trees in secondary forests, especially inside patches that adjoined remnant areas of original dipterocarp forests in the hills.

On the other islands of the Philippines where the various races of this species occur, the habitat types in which the birds are found are more restricted and not as widely varied as those on Dinagat, where the present form occurs. On Dinagat the habitat types of this form embraced those in the lowlands and those in the interior that extended up into the higher elevations in the hills and mountains, including practically all the kinds of possible habitat types found throughout the entire island.

FAMILY ZOSTEROPIDAE WHITE-EYES

Zosterops everetti basilanica Steere, 1890

Dinagat
Siargao*

Everett's White-eye was common on Dinagat and Siargao. It was usually observed in pairs, in small flocks, or in feeding groups, as it went about and fed in a very wide variety of habitat types. On both Dinagat and Siargao, pairs or small feeding flocks of six to a dozen

members were often observed feeding actively among the foliage and branches of the bushes, shrubs, and low trees growing in irregular patterns inside the neglected fields and abandoned clearings in the lowlands close to the cultivated fields in the foothills. Pairs or small groups were observed feeding among the various growths inside secondary and dipterocarp forests and in clearings made in them. The bird was also seen feeding in pairs and in small flocks occasionally inside scrub forests growing on the hillsides and slopes of mountains in the interior of Dinagat.

It was amazing that, on Dinagat and Siargao, Everett's White-eye was observed to stay in a very wide variety of habitats as its normal range. On the other islands of the Philippines, this same form or other forms of the same species were found only in a much more restricted variety of habitats and altitudinal ranges. This same phenomenon in bird distribution had been observed to be true for several other species of small birds on Dinagat and Siargao.

FAMILY ESTRILDIDAE MANNIKINS

Lonchura leucogastra manueli Parkes, 1958

Dinagat*

Siargao*

The White-breasted Mannikin was fairly common on Dinagat and Siargao. It was met with usually in small feeding flocks in the grasslands and in abandoned clearings on the hillsides and mountain slopes in the interior of the Mt. Kambinlio and Mt. Redondo localities and among the hills in the interior of Siargao. In the normal range of this mannikin on Dinagat and Siargao, its distribution and the density of its population in any one locality was never as high as that of *Lonchura malacca jagori*. The White-breasted Mannikin was definitely not as common or as widespread on Dinagat and Siargao as the Chestnut Mannikin. This fact was very noticeable, especially in the northern half of Dinagat, including the localities of Loreto on the west coast, from the seacoast and into the hills and mountains in the interior, clear across to the Pacific Ocean side of Dinagat.

The White-breasted Mannikin usually went about in small flocks of six to a dozen members and preferred to stay among the tall grass that was growing and taking over the idle and abandoned fields and clearings in the hills, close to the patches of original forests, especially remnant original dipterocarp forests and scrub forests, and also close to secondary forests and mixed secondary and original dipterocarp forests. In the abandoned clearings among the scrub forests in the higher elevations of hills and mountains, both on Dinagat and Siargao, small flocks of *L. leucogastra manueli* were more frequently met with

than *L. malacca jagori*. In the lowlands, however, the latter was more often encountered in the grassland areas, ricefields, and open country. Moreover, it was found in much larger flocks than *L. leucogastra manueli*.

Several times, on both Dinagat and Siargao, small flocks of the White-breasted Mannikin were observed inside dense forest vegetation, but not really very deep inside the woods. The birds usually perched and fed among the bushes and tall grass growing inside the patches of forests, usually not far from the clearings made inside them.

The local inhabitants called this mannikin "Ma-ya," a name given also to the more common and better known mannikin *L. malacca jagori*.

Lonchura malacca jagori (Martens, 1866)

Dinagat*

Siargao*

The Chestnut Mannikin was very common on Dinagat and Siargao. Flocks of about a dozen or more members were frequently observed feeding on the ripening rice grains in the ricefields that occupied the greater parts of the lowlands from near the seashores into the interior toward the hills, on both Dinagat and Siargao. Sometimes several flocks came together as they went around the ricefields feeding on the ripening grain, frequently in the same ricefields in a particular locality. The total number of feeding birds in cases like this could easily be several hundred, or even several thousand. When such large numbers fed on particular ricefields, the amount of destruction could be great. This union of feeding flocks of the Chestnut Mannikin was observed in localities where some particular ricefields had matured much ahead of the others in the same general area, or where the fields had matured much later than the others. Naturally, the birds concentrate in a much-limited area to feed when the crops do not mature at the same time. The farmers on both islands, as on the other islands in the Philippines, are careful to plant their fields at about the same time and use the same variety of rice. Any other variety that matures much before or after the others in the same general area would be very much victimized by the Chestnut Mannikin.

In order to minimize the depredations of this mannikin on the rice crops, the farmers in the localities where rice was close to ripening set up various devices to drive away the birds. Scarecrows were used in good numbers, but these had very limited effectiveness. The most common device was the network of hemp strings and ropes that were tied to bamboo and wood posts. The posts were planted at given distances from one another and had long strips of white cloth (spaced about a half meter apart) tied to the strings and ropes, which were about the average man's height from the ground. All the strings and ropes in

a network were connected to a main rope that could be pulled from a strategic location at one corner of a particular field. On this site a low platform, slightly higher than the network system, was built; and on this platform a man was regularly assigned to pull the main rope connecting the strings and ropes all over the ricefields. When he did, all the white strips of cloth would immediately wave simultaneously, thus frightening the mannikins. Movement of the white cloth strips in the wind also frightened the birds. This same method is widely used throughout the Philippines.

On Siargao and especially on Dinagat, there were a few particular sites in tall grassland areas that were observed to be the regular roosting places for hundreds, and even thousands, of Chestnut Mannikins. As early as four o'clock in the afternoon, when the sun was still high enough but was soon to go down below the horizon in an hour or two, numerous flocks of Chestnut Mannikins, numbering about one to two dozen members in each flock, on the average, would start arriving and settle down in a particular area of tall grass. They usually alighted on the upper parts of the grass stems. The favorite locations of these roosting sites were the marshy areas that were covered with dense stands of tall grass and were situated close to the ricefields in the lowlands and also close to the foothills with dense second-growth vegetation covers. The numerous flocks would continue to arrive from different directions, and each flock would immediately proceed to particular sites. These sites would be their roosting areas. Very early the next morning, the birds of the various flocks would start moving about in the immediate vicinities of their respective roosting places. As the sun got higher, the different flocks eventually left the roosting area and headed in different directions. In the afternoon the numerous flocks would come back to the roosting area one after the other. A particular roosting area would remain as such as long as the birds were not greatly disturbed or the site was not tampered with radically, such as by cutting down and clearing the grassland area or by burning it.

The local inhabitants on Dinagat and Siargao set all kinds of traps and other catching devices to get the birds in large numbers, mainly for food.

On these two islands the Chestnut Mannikin was called "Ma-ya," the same name given to the White-breasted Mannikin. In order to differentiate the two forms, some of the people called the Chestnut Mannikin "Ma-yang Bungol," literally meaning "deaf Maya." These two local names are widely used by the people in the southern Philippines who speak Cebu Visayan. In many other places in the Philippines, especially in the Tagalog provinces on Luzon, the local name for the mannikins in general is "Ma-ya," usually accompanied by the local word that modifies and describes the particular form of mannikin.

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